RAILROAD MAN'S MAGAZINE

KHAKI *on the* RAILS
How Our Boys in Army Uniform Are Playing the War Game

MAKING BRAKES *for the* WORLD *by* C. F. Carter
A Mechanical Marvel *of* Incredible Power

Tales *from the* Knights *of the* RAILROAD ROUND-TABLE

OLD TIMES *with the* STYLUS-PUSHERS *by* "J. E. M."
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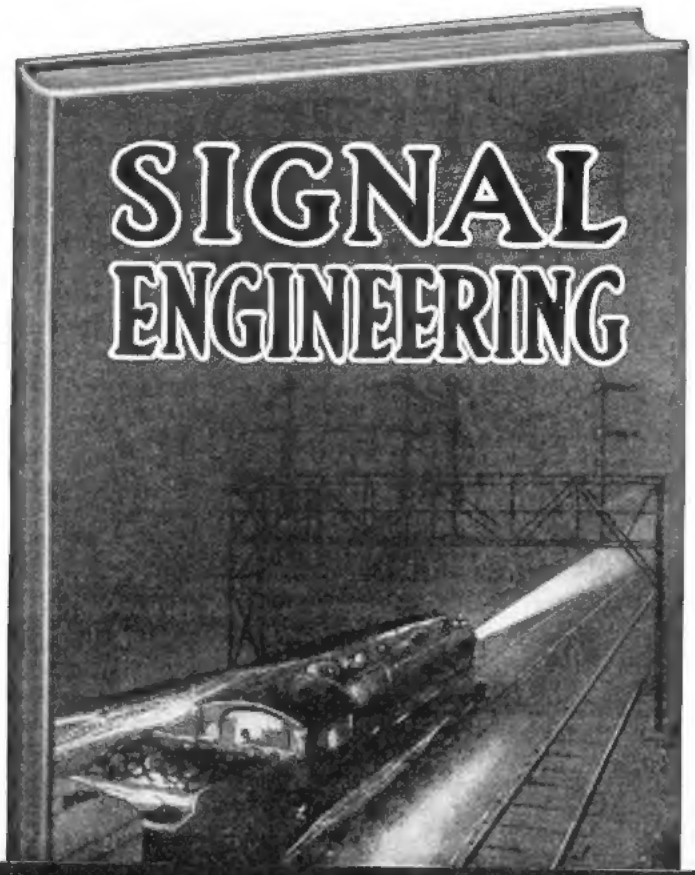

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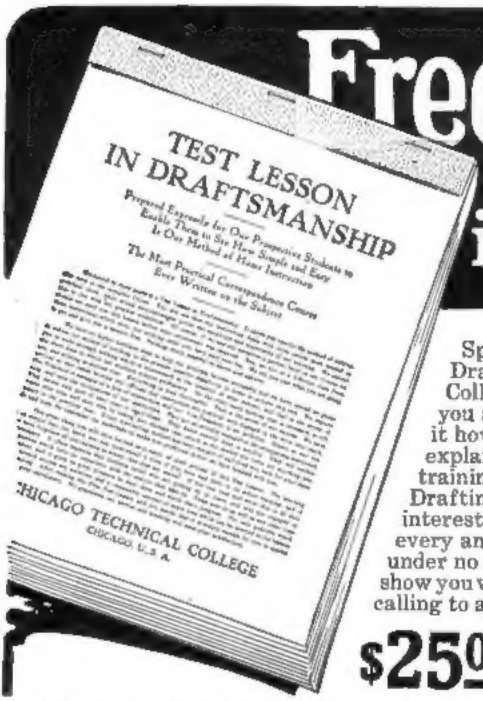
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RAILROAD MAN'S MAGAZINE

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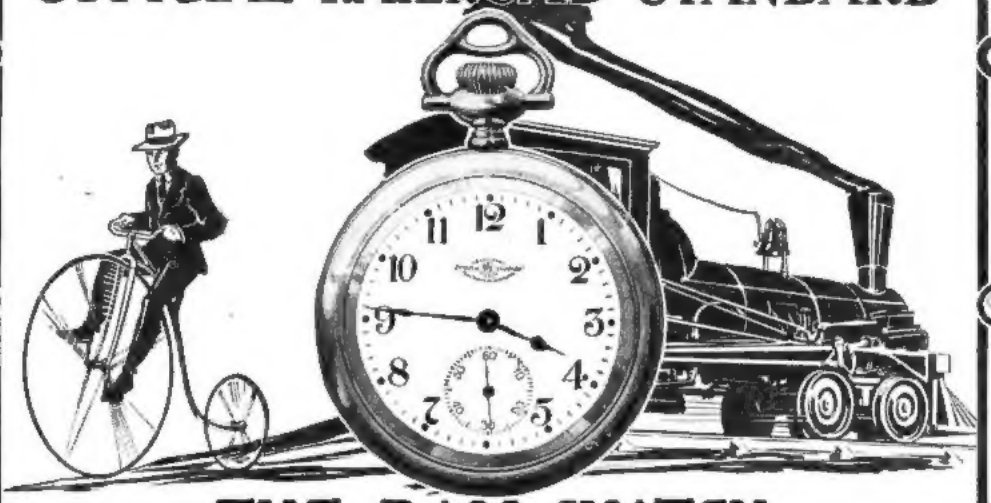

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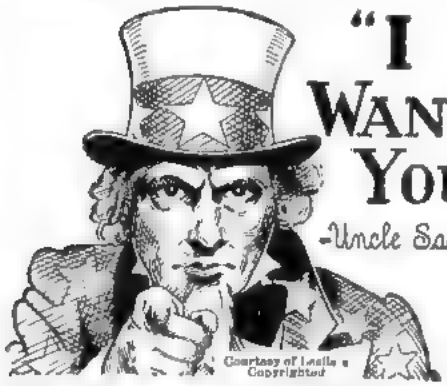

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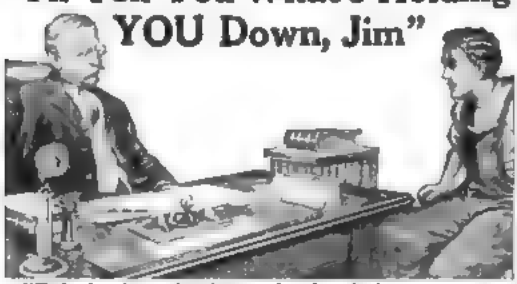

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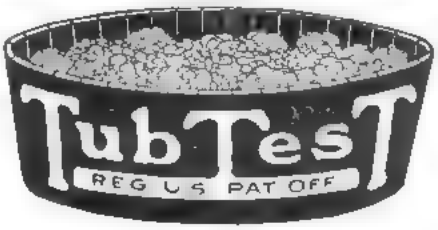

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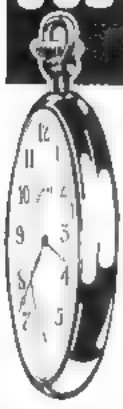

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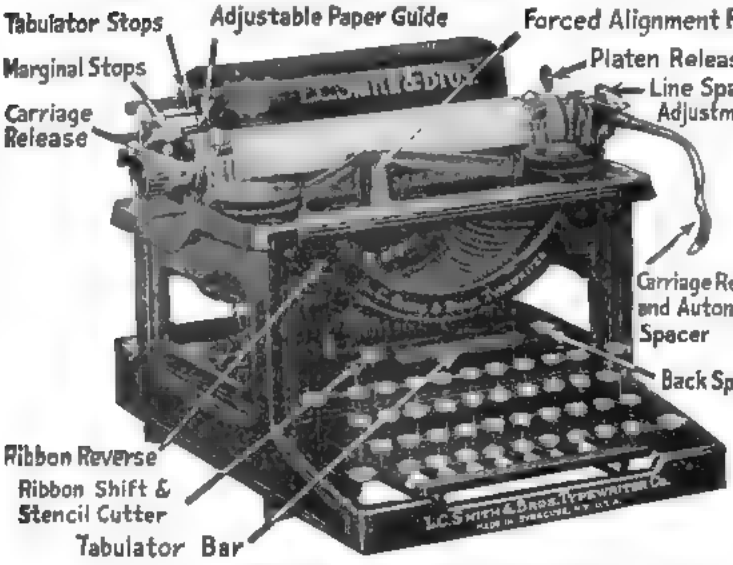

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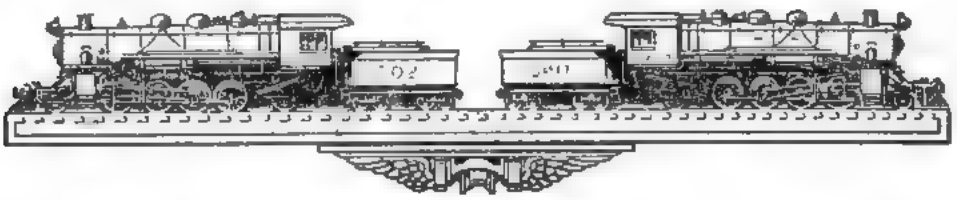
RAILROAD MAN'S MAGAZINE

Vol. XXXV. FEBRUARY, 1918. No. 2



MAKING AIR-BRAKES FOR THE WORLD.

How the Westinghouse Company Constructs a Marvelous Device Many Times More Powerful Than the Locomotive That Hauls the Whole Train.

BY CHARLES FREDERICK CARTER.

Author of "When Railroads Were New."

INSTEAD of making a frontal attack on their manufacture suppose we execute a flank movement by first boning up a bit on the general subject of air-brakes; because the chances are that, like the great majority, you have been taking the air-brake for granted; hence, have not treated it with the respect that is its due, and are incapable of appreciating the science of braking at its true worth.

In the first place anybody who has the money and other facilities and knows how can make steam locomotives or other motors to haul trains. A great many people actually do build steam locomotives, electric locomotives, electric cars, gasoline-propelled, and gas-electric railroad cars.

There are few railroads that do not build at least enough of their own engines to demonstrate their independence and so inspire locomotive salesmen with proper humility, while there are a number of corporations whose sole business is the making of locomotives. No; there is nothing about locomotive-building to lift those who follow that vocation above the common ruck of manufacturers of brick, pajamas, nails, toothpicks and such like.

Westinghouse Did It.

But when it comes to the manufacture of brakes to stop trains the situation is altogether different. Because any car from any road is likely to turn up at any time on any other road, all cars must have the same kind of brakes so they can be hauled in the same trains together; and that kind was invented by George Westinghouse, who hit upon the only effective medium for train-control away back in 1869.

Westinghouse originated means to control this medium before the railroad was in long trousers, then developed the means as the railroad grew up, sowed its wild oats, took

over the nation's transportation business and settled down.

A company bearing the inventor's name was organized to make brakes for the United States, while other companies were formed under French, Russian, Italian and other foreign aliases to make brakes for other lands.

In later years another company also began making air-brakes, but owing to the fundamental necessity of hauling all kinds of cars from everywhere in the same train these brakes had to be enough like the Westinghouse kind to work with them. If any passenger can tell which one of the two makes of air-brakes stops the car on which he rides, he is whole-heartedly welcome to the knowledge.

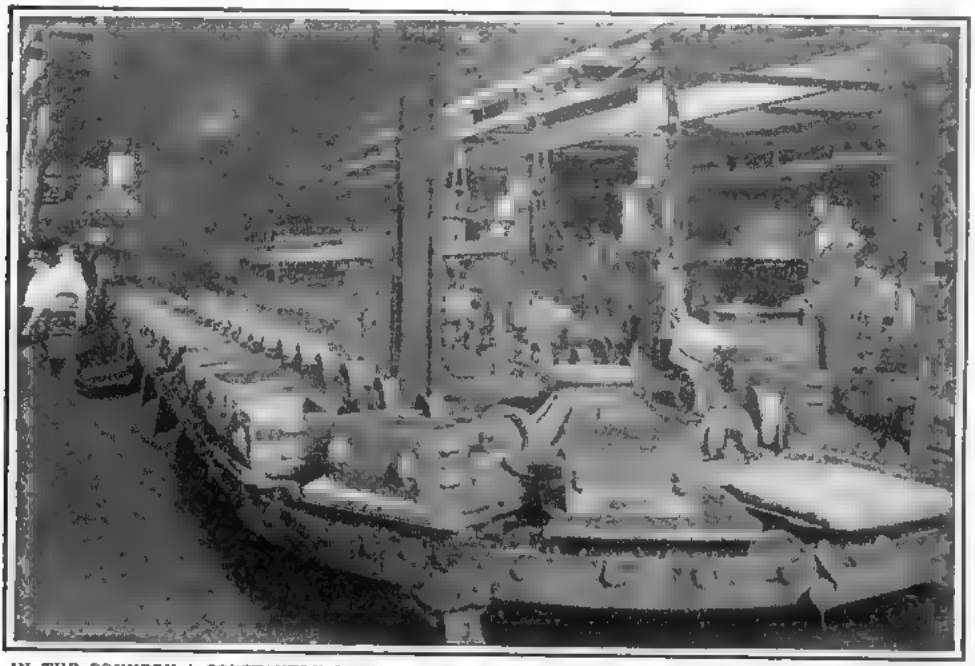
Also there are still those in Europe who imagine they can control trains with vacuum-brakes; but this negligible minority is fast fading to the vanishing-point.

But meanwhile the immense development in speed and weight of trains, and the frequency with which they are run, has called for an equally great improvement in the brakes to control them; so the two manufacturers had to keep up with the procession or fall out altogether. They kept up. So for many years to come, those who want to buy train-brakes will not have to shop around very much to find the particular style they need.

This may be a good place to call attention to the remarkable fact that, notwithstanding the tremendous advance that has been made in air-brakes, any automatic air-brake of any era will operate with brakes of any other era. You can couple a car equipped with an air-brake of the vintage of '85 in the same train with 1917 fall-style brakes and they will work together; not so well, perhaps, as if they were all alike, but you could get over the road with them.

In the second place, do you realize that the brake under a single car is many times more powerful than the locomotive that hauls the whole train? Well, it is. If you do not believe this, kindly examine the records of the dynamometer car which has been attached to an engine and has stopped the engine with its own brakes.

It takes a locomotive from five to ten



IN THE FOUNDRY A CONSTANTLY MOVING PLATFORM CARRIES AROUND THE MOLDS AND INTO THEM MEN POUR THE MOLTEN IRON. WHEN THE MOLD HAS REACHED THE END OF THE OVAL, THE IRON, NOW COOL, IS DUMPED OUT, AND THE SAND IS REMOVED.

minutes and a distance of four to seven miles to attain speed, with its train, of sixty miles an hour. The air-brake stops the train in twenty seconds and a distance of less than a thousand feet.

To cite some exact figures as an example, during the famous Absecon brake-trials in New Jersey in 1913, a locomotive and train weighing together 559.6 tons attained a speed of 60 miles an hour on a level track in five minutes, forty-seven seconds, and a distance of 18,500 feet. The brakes overcame the energy of 63,250 foot-tons stored in the train and brought it to a stop in 18.7 seconds and a distance of 954 feet.

If no brakes had been used and the train had been allowed to run until brought to a stop by the resistance of the air, journal-friction, and effects of gravity, it would have required a distance of 24,000 feet, or nearly five miles to have come to rest.

No Brakes, No Speed.

Experiments on the Illinois Central Railroad, corroborated by the Westinghouse Company, show that a passenger-train stop from a speed of sixty miles an hour without brakes would require about fourteen minutes and a distance of 34,825 feet, as compared with 1,000 feet and twenty seconds for a train equipped with modern brakes.

Basing the headway upon the time required to run six times the stop-distance, trains with modern brakes could be operated at intervals of one minute, eight seconds, as compared with thirty-four minutes for trains without brakes.

But in order to operate the two systems with equal safety, it would be necessary to run the brakeless train at a speed from which it could stop in the same distance as the train with brakes, or nine miles an hour; or say five and a half days between New York and Chicago instead of twenty hours.

Moreover, it would be impossible to operate trains without brakes over any grade exceeding ten feet per mile.

If you would appraise the air-brake's steady job at its exact value, figure out the kinetic energy it has to wrestle with every time it stops a train. A good rule is to multiply the weight of the train in pounds by the square of the speed in miles per hour and divide the product by 30. The quotient will be the foot-pounds of energy the air-brake has to dissipate in stopping the train.

For example, a locomotive weighing two hundred tons and ten Pullmans weighing eighty tons each, not a rare combination, running at eighty miles per hour, a speed attained more often than some people think, would develop 426,700,000 foot-pounds of kinetic energy, or 213,350 foot-tons; that is, power enough to lift that number of tons one foot from the ground, or one ton 213,350 feet, or forty miles, straight up into the air.

Or a train weighing 1,138 tons running eighty miles an hour develops energy enough, if it could be utilized in a gun, to fire a fourteen-inch projectile a distance of ninety-seven miles.

Just remember this the next time you take your favorite promenade on a railroad track, and do not argue with the locomotive about which is entitled to the right of way.

The Wilmerding "Studios."

Now, then, if you are duly impressed, we can go through the studios of the Westinghouse Air-Brake Company at Wilmerding, fourteen miles east of Pittsburgh. It would be a profanation to speak of the place as "works," as you would of a vulgar steel-mill, for it is as neat as a pin is alleged to be; so clean, quiet, serene, one almost forgets one's aversion to work while under the spell of Wilmerding.

Thirty-four acres are fenced in, of which fourteen and one-half acres are covered by buildings, some two and three stories high, so that the total floor area is twenty-two acres; the rest of the grounds are stacked high with unfinished castings and material, leaving only room enough for passage-ways and railroad tracks, over which four hundred carloads of materials are received and two hundred and fifty carloads of finished products are shipped each month.

There are also 13,000 feet of industrial railway of two-feet gage, equipped with three gasoline motors of the general get-up

of a mine locomotive and 165 cars to transport material in process of manufacture from the foundry to the various shops and thence to the shipping-department.

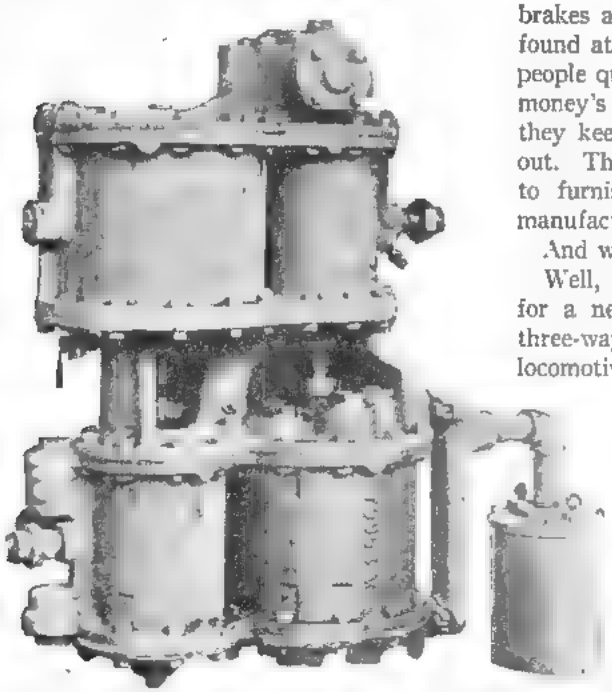
In a science undergoing a perpetual process of evolution the drafting-department, naturally, occupies a prominent place. The drafting-department is on a quiet second floor at Wilmerding; but no lady would ever think of going there because the place is lighted by Cooper-Hewitt lamps—those ghastly greenish-yellow things which perpetrate such horrid libels on the complexion.

Here are fifty draftsmen and forty other employees occupied with recording, filing and distributing the drawings, and other clerical work.

All Drawings Ever Made Are on File.

If the intricacy of the air-brake and the never ending improvement being made in it have never been fully appreciated before, your ideas ought to be set right when confronted by this drafting-department. All the drawings that ever were made for air-brakes are on file here where they can be found at a moment's notice; because some people quite properly insist on getting their money's worth out of their brakes, and so they keep them in service until they wear out. This obliges the company to be ready to furnish on demand any part it ever manufactured.

WHEN WESTINGHOUSE STARTED MAKING AIR-BRAKES, IN 1869, THE FIRST MAN HE EMPLOYED WAS CHRISTOPHER HORROCKS, WHO IS NOW SECRETARY OF THE VETERANS' ASSOCIATION



CLOSE-UP VIEW OF A WESTINGHOUSE GIANT CROSS-COMPOUND COMPRESSOR. THESE ARE SET UP IN A RACK AND WORKED BY STEAM FOR HOURS OR DAYS UNTIL THEIR PERFECT OPERATION HAS BEEN DEMONSTRATED.

And when does an air-brake wear out?

Well, a customer sent in the other day for a new part for one of those ancient three-way cocks that were to be found in locomotive cabs thirty-five years ago.

Due to the fact that each step in advance is planned so that the new part can be operated in the same train with its predecessors, there are many parts of devices that differ very slightly in dimensions or in the kind or extent of work to be done upon them.

But, no matter how trifling this difference, each new integral part is given a "piece number." Piece numbers are also assigned to complete devices and to every

part formed by uniting two or more integral parts. Each drawing is accompanied by a bill of material for each device.

An elaborate reference system provides the draftsmen with prints of every piece manufactured to date; so that in designing new apparatus they can use, as far as possible, standard details.

In the last three years 9,000 tracings have been made, increasing the number of drawings in active circulation to 26,500. The different parts manufactured are represented by 59,500 piece numbers, of which 15,000 have been added in the last three years.

In a single month as many as 13,600 blue-prints have been made and distributed for use in the various departments. An average of a thousand drawings is in constant circulation from and to the files in the drafting-department.

Thirty-Nine Cores for a Single Casting.

Next in sequence after the drafting-department comes the pattern-shop; for the air-brake is composed principally of iron and brass castings. Here the impression deepens that the production of air-brakes is at once an art and a science.

This impression, if imparted to the folk at Wilmerding, would occasion no surprise; for braking has long been regarded as both an art and a science.

Certainly none but artists could reproduce, first in wood, then in sand and lastly in metal, apparatus at once so intricate and so delicate. Some of the castings in an air-brake are so involved that the cores, as the sand structures which form the hollows in a casting are called, have to be made in no fewer than thirty-nine distinct pieces and then assembled in as many core-boxes to form a single casting.

The casting for the equalizing portion of a steam-road brake is so gnarled and twisted that to attempt to describe it in writing would give the typewriting machine the delirium tremens.

But anyway the core is made in thirty pieces and then assembled in one to make a casting weighing thirty pounds. That ought to give some idea of the intricacy and delicacy of the thing.

When, a few years ago, the National Foundrymen's Association held its annual convention in Pittsburgh the members were invited out to Wilmerding to see the air-brake studios. When those men, who had devoted their lives to the production of every conceivable thing that can be cast in metals, were shown some of these intricate patterns all had the self-control to reserve their comments until they got out of ear-shot—that is, all but one grizzled veteran who had the moral courage to be honest.

"Ain't No Sech Animile!"

This old foundryman told the Westinghouse people in so many words to go and tell the marines they could cast such blamed complicated pieces, but not to try to stuff it down his throat, for he knew something about foundry work himself.

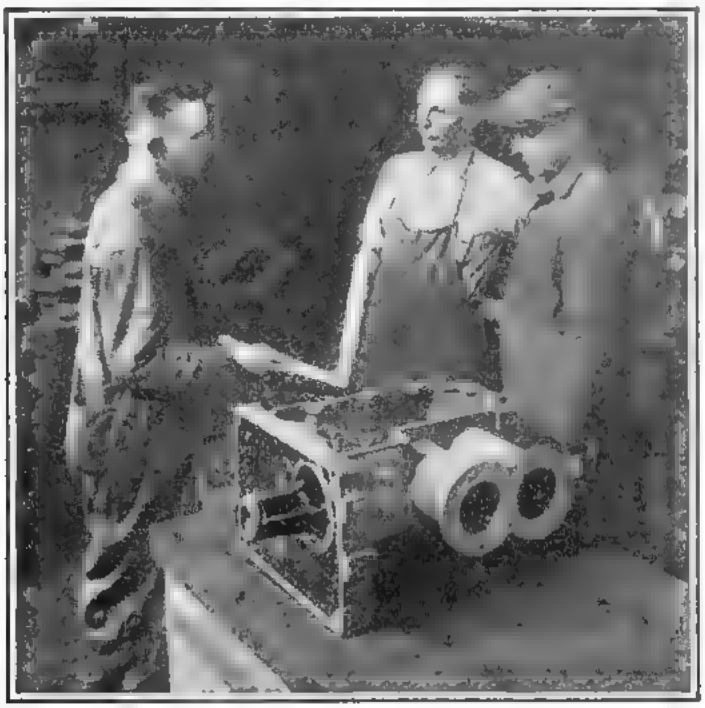
And when they took him to the foundry and got a core and made a mold and cast the piece, he said it was a scratch; they had got away with it once, but they never could make such things on a commercial basis.

When the pattern-makers get through, the core-makers take these intricate pieces in hand. The cores are made of a special sand composition which smells rather appetizing while baking in gas-fired furnaces at a temperature of 550 Fahrenheit, although it might prove somewhat indigestible.

Twelve hundred men in the iron foundry turn out five hundred tons of castings daily, weighing from two ounces to two hundred and fifty pounds, but averaging four pounds. Of all the departments in the air-brake studios this is the most satisfying as a spectacle, because of the high degree of efficiency attained in handling such materials as sand and molten iron.

The molds are set on moving tables which run on oval tracks, passing in front of the molding-machines, core-setters, and cleaning-floor. There are four of these moving tables, each 204 feet long.

The one on which ten inch reservoirs are cast has one hundred and fifty-five tables capable of accommodating castings weighing from one hundred to two hundred and fifty pounds. This table requires a forty horse-power motor to run it, although it is not run continuously, the reason being that



THE DESIGN OF A NEW ELECTRIC MOTOR-DRIVEN AIR-COMPRESSOR UNDER DISCUSSION BY A FEW OF THE LARGE STAFF OF ENGINEERS MAINTAINED BY THE COMPANY

those big molds cannot be handled fast enough for that.

But the neighboring table, on which castings ranging from two ounces to twenty pounds are made, moves steadily along at a uniform gait all day long. Casting is a continuous performance in which each workman enacts a single part and keeps doing that one thing over and over.

Oliver Twist of the Molding-Rooms.

As the moving tables trundle past the molding-machines a man removes the empty flask from which a red-hot casting has been dumped farther back along the line, while another man places a new mold aboard.

Suspended in front of the cupolas and over the moving tables are oval runways on which trolleys are mounted from which ladles are hung. Each ladle is in charge of a man who mounts the moving table, rides along upon it and fills a mold, or several molds according to the size of the castings, jumps off, hurries back to the cupola, presents his ladle, and asks for more, just like *Oliver Twist* in Cruikshank's drawing.

By the time the molds have traveled to the farther end of the track the castings are cool enough to be dumped out on to an iron grating, which allows the sand to drop down into a hopper, which feeds it on to a conveyor, which carries it to a mixer, where fresh sand and water are added.

By the time the used sand is thoroughly cooled it is back at the molding-machines again, where a foreign gentleman shovels it into a flask. Twenty minutes are required for a given lot of sand to ride the merry-go-round from start to new deal.

After the pattern has been placed in the "drag," as the bottom half of the flask is called, and nicely tamped in and the core-setters have done their bit, the "cope," or top half of the flask, is clapped on, the two halves are clamped together and the united flask is then placed in the molding-machine, where it is squeezed by compressed air to the limit and then shaken down, the process probably having been suggested by what the food speculators are doing to the free-born American people.

Two men are kept busy setting up "spiders," as the cast-iron sectional framework for the skeleton cores, around which auxiliary reservoirs are cast, is called.

A solid core would be too heavy and inconvenient to handle; besides, after the casting is finished there is only one small hole through which metal parts of a core could be removed.

So a sectional skeleton in small pieces was designed which would be solid and stiff enough for casting purposes, but which would collapse when the casting was placed in the tumbling barrel so that it

could readily be removed through the small hole.

The brass foundry, which occupies a floor area of 26,150 square feet, is equipped with one furnace of one thousand pounds and eight of six hundred and fifty pounds capacity each. Forty-five minutes are required to melt a charge of six hundred and fifty pounds. Forty tons of brass castings weighing from one ounce to ten pounds each are produced daily.

If there is any mystery about the uses to which so large a quantity of brass can be put in apparatus which in outward appearance consists of cast iron, it will be made clear in the machine-shop, to which the castings are delivered in carload lots by the industrial railway as soon as they are cooled and cleaned.

The discovery will be made that the working parts of the iron castings are lined with brass and that all the working parts are made of that metal. Different cavities in the iron castings are bored out and brass bushings are then forced in under pressure.

That is, the discovery may be made in the course of time. At first it is impossible to see the machine-shop at all for the machinery that is in it; and after that you cannot see the machinery for the breastworks and revetments of material stacked mountain high on both sides of every aisle and around every machine.

Apparently the machinists are expecting a hard winter and do not intend to run short of supplies in case the industrial railway should be blockaded for a month or so.

But if you can carry the first and second line of trenches you may come, in good time, upon a dug-out garrisoned by a machine and a workman, the former illuminated by an incandescent lamp, the latter by a hospitable smile.

Parts Must Fit to 1-1,000 Inch.

For they are a friendly lot, these artists in cast iron and brass, ready, with infinite patience, to answer fool questions and to show admiring greenhorns the remarkable celerity with which they perform unbelievably accurate operations.

The working parts of an air-brake must be absolutely air-tight, and to fit pieces of metal together so that they can work smoothly and still be air-tight requires some pretty fine work. A variation of more than 2-1,000 of an inch condemns a piece.

The casual observer cannot fail to be impressed with the fact that the men who produce these accurate fits never see the completed parts, but only the one piece upon which they perform a single operation.

Everything Done by Piece-Work.

The operations are divided into fractions so minute that piece-work rates—everything is done by piece-work, even to the hauling of material from one machine to another and from the last machine in a series to the next department—have to be extended so far to the right of the decimal point that it is a wonder the auditor doesn't get lost wandering around out there.

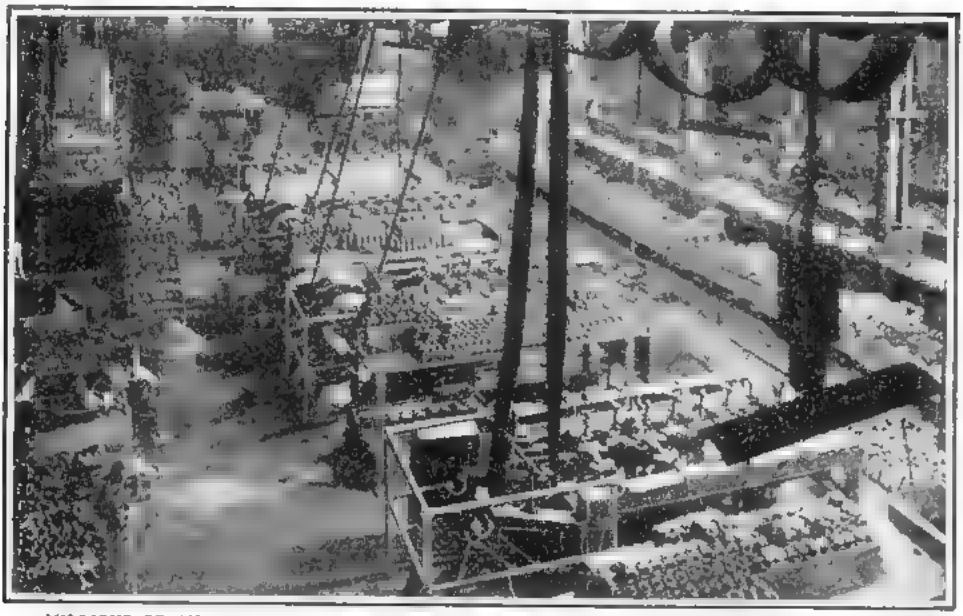
The parts that make up the famous "K" triple valve, in universal use in freight service, for example, go through no fewer than one hundred and fifty-seven distinct operations in the machine-shop. Yet when these parts come together in the assembling-room they fit within considerably less than a hair's breadth.

Some of the iron castings have no fewer than fourteen small parts; and some ports in the "K" valve are only three-thirty-seconds of an inch in diameter. These ports have to register exactly—and they do.

Inspectors are constantly making the rounds of the shop. They arrive unannounced at irregular and unexpected times and help themselves to whatever they choose to test with their gages.

High-speed machines and "jigs" solve the problem of combined rapidity and accuracy. A "jig" is a steel form into which a piece to be drilled fits exactly. The drills have from four to seven spindles, according to the job in hand.

The finest work is done in the brass-finishing department. The smallest piece in a triple-valve is the graduating-valve, which is five-eighths of an inch long, half an inch wide and a quarter of an inch thick and has one port. It takes six operations to turn out a graduating-valve.



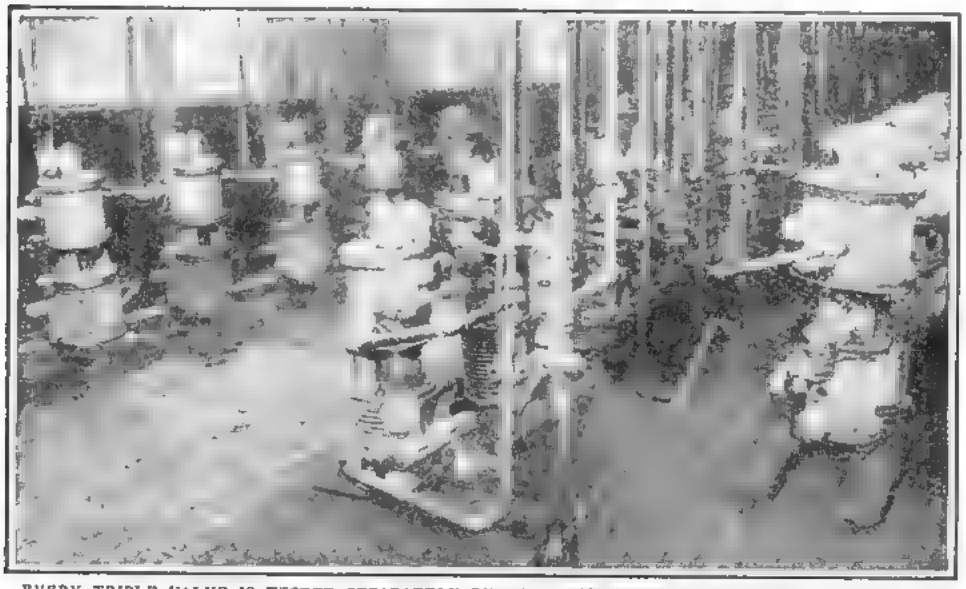
MILLIONS OF AIR-BRAKE PARTS COME DOWN TO THE DETAIL ASSEMBLY DEPARTMENT IN A SINGLE GRIST, AND HERE THEY ARE COLLECTED AND SORTED OUT NOTE THE COCK-GRINDING MACHINES

The equalizing slide-valve, which has fourteen ports, requires twenty-three separate operations.

"Perfect Products!" the War-Cry.

The outstanding feature of the air-brake studios is the care taken everywhere to insure perfect products. There is a chemical laboratory in which foundry materials are analyzed daily.

At every stage of manufacture individual parts are tested; and then as they are assembled they are subjected to a regular code of tests until the completed device



EVERY TRIPLE VALVE IS TESTED SEPARATELY BY MEN WHO DO NOTHING ELSE, AND AT EVERY STAGE OF MANUFACTURE THE INDIVIDUAL PARTS ARE TRIED OUT HERE IS SHOWN THE TEST-ROOM FOR AIR COMPRESSORS

reaches the test-room set apart for it to undergo a final service test.

Every triple-valve is tested separately by men who do nothing else. Compressors are set up in a rack and worked by steam for hours or days, until their smooth and perfect operation has been demonstrated.

While the air-brake runs so largely to cast iron and brass, there is still a good deal of blacksmithing to do—enough to require 61,000 square feet of space, nine drop-hammers of six hundred to two thousand pounds, four trimming-presses, three forging-machines, four Bradley hammers, and other usual equipment of a big blacksmith shop.

But it is ordinary blacksmithing after all, over which it is impossible to work up any degree of enthusiasm.

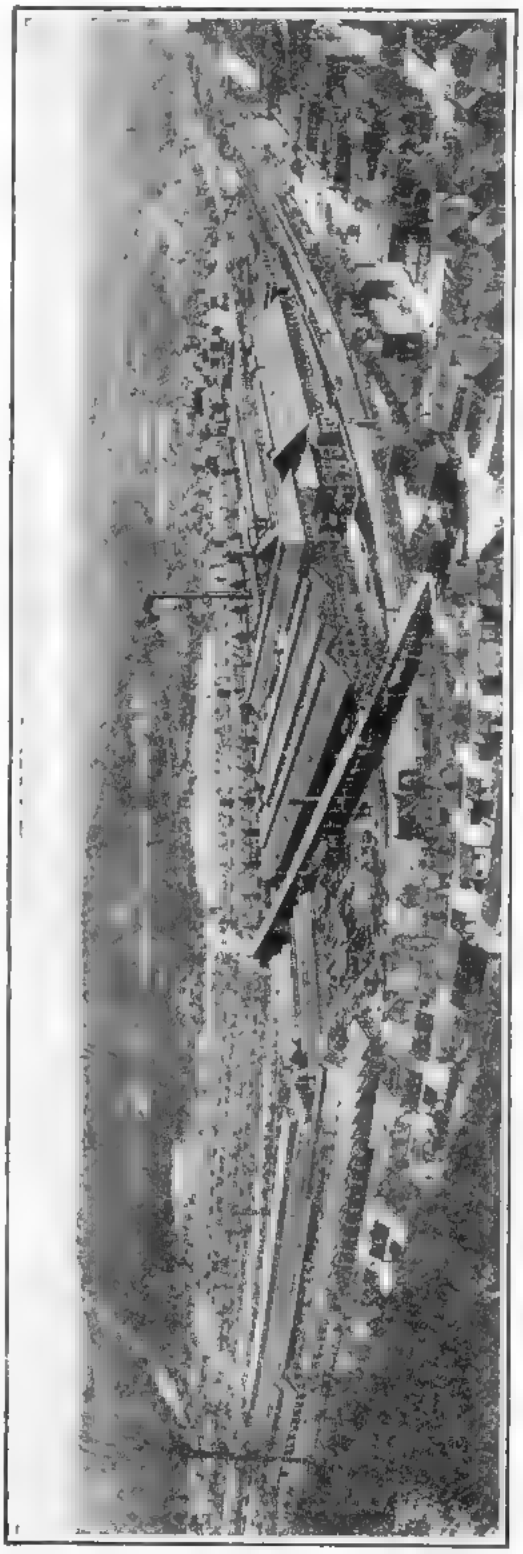
12,000 Hose-Clamps a Day!

Still, even the blacksmith shop has its features. Here is a department where twelve thousand annealed steel galvanized hose-clamps are turned out daily, a figure which gives a line on the immense consumption of air-hose by the railroads.

The clamps are forged under a thousand-pound drop-hammer, using a three-pass die.

Next they go to a trimming-press, where the flash is trimmed off, and thence to a furnace for heat treatment. Holes are then drilled for the bolt; they are then smoothed off in a tumbling-barrel for three-quarters of an hour, formed into shape, pickled in acid, and galvanized.

The reservoir-department yields better returns for the searcher after the picturesque. Reservoirs are made so large now—from sixteen to twenty and one-half inches in diameter and four to fourteen feet in length—that not much of a



THE GREAT HOME OF THE WESTINGHOUSE COMPANY AT WILMERDING, PENNSYLVANIA, WHERE 1,000 SETS OF AIR-BRAKES ARE TURNED OUT DAILY

stretch of imagination is required to fancy oneself in a sawmill, especially as the idea for the apparatus to handle these blazing hot logs has been swiped bodily from the sawmill. But those reservoirs are subjected to indignities that no log ever endured.

The reservoirs are fashioned out of tubing which reaches the shop ready made. Blanks for the heads are also purchased from the steel mills and formed over a die in a hydraulic flanging-machine.

The next operation is to fit the heads in the shells. This is done by driving or pressing them in cold to a tight fit. The edges of the flange and reservoir are nicked with a cold chisel to hold the heads securely in place during the heating and welding, which is the part of the act worth seeing.

One lone man takes charge of these steel logs when they reach the welding-machine and handles them until they are completed and ready for painting. One end is run by a four-armed spider which clutches the other end into a gas-furnace, which makes more noise than the circumstances would seem to require.

In order to keep the necessary watch on the heating process the solitary operative has to stand quite close to the roaring furnace, so that he can always keep nice and warm.

When the log has been brought to welding heat the workman pulls some levers, whereupon the reservoir is withdrawn from the furnace, rolled down a logway and thrust between two rapidly revolving rollers, the top one being on a hinged driving-shaft so that it can be forced down on the flange of the reservoir, while the bottom roller is adjustable for different sizes of reservoirs.

Baths, Baths, Baths.

After a brief but strenuous and noisy session with the welding-rollers the reservoir, one end still red hot, is dropped on live rollers which carry it back to another logway, where it is hoisted up and kicked over on to the logway by a long arm that is thrust up precisely like the log-turner in a sawmill and left to cool.

Air reservoirs are now enameled inside and out by a special process as a protection against corrosion. After the heads have been welded in and the pipe-holes reenforced the reservoirs are given a bath in sulfuric acid to remove dirt, scale and iron oxid; then a lime-water bath to remove the acid, and then a bath in plain water to get rid of the lime. They are then ready to be dipped in a tank of warm enamel and baked, after which they are given a second coat.

N. B.—Don't Speak of Air "Pumps."

The heaviest piece of apparatus turned out is the eight and one-half-inch cross-compound compressor, which supplies the large amount of air needed to operate heavy modern trains. Right here is a good place to utter a word of caution to old-timers who may still be disposed to speak of air "pumps," which has been considered bad form for the last eight years.

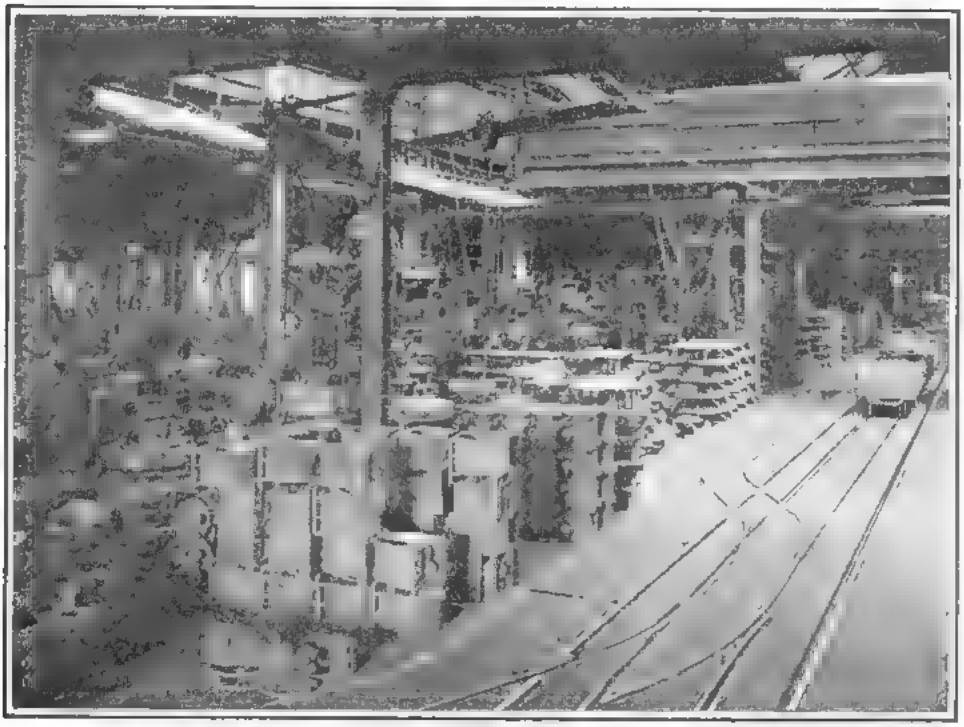
To deliver the large amount of air required for the heavier cars, longer brake-pipe due to the longer trains handled, the greater number of flexible fittings and connections where leakage may occur and the growing use of pneumatically operated auxiliary appliances, such as water-scoops, automatic ash-pans, bell-ringers, Pullman water-raising system and so on requires something more than a mere "pump."

The present standard is a compound, two-stage compressor with steam cylinders eight and one-half and fourteen and one-half inches in diameter and air cylinders nine and fourteen and one-half inches in diameter by twelve inches stroke. This compressor weighs one thousand five hundred pounds.

On an upper floor of one of the buildings at Wilmerding is the test-department, which has nothing to do with the numerous tests constantly in progress throughout the shops, but is more of an experimental laboratory and exhibition room.

Here are to be found equipment, piping and all, for a hundred-car freight-train and a twelve-car passenger-train. There are gages and lights to show what takes place in different parts of the equipment under various conditions and appliances for ex-

WHERE THE RESERVOIRS ARE FITTED UP FROM THE FLAT SHEETS INTO THEIR PERMANENT FORM THEY UNDERGO SEVERE HYDRAULIC AND AIR-PRESSURE TESTS, AFTER WHICH THEY ARE ENAMELED INSIDE AND OUT TO PREVENT CORROSION



SMALL RAILROADS, MOSTLY DOUBLE-TRACKED AND SOME THREE-TRACKED, RUN THROUGH THE SHOPS TO SERVE THE VARIOUS CROWDED SECTIONS.

hibiting all the stunts of which an air-break is capable.

A skittish person should not go near the test-department, for some one there is likely to make an emergency application at any time; and an emergency application in that quiet, low-ceilinged room makes noise enough to scare that kind of a person out of a year's growth.

This test-department is a very important part of the establishment, for the air-brake is still in a state of swift development. New problems come up daily for solution. One of the latest was in connection with the Pennsylvania Railroad's electrification project over the Alleghany Mountains from Altoona to Johnstown, which will require a heavier compressor than any heretofore used.

Universal Valve Weighs 400 Pounds.

And then there is the universal valve, the big thing in passenger equipment, which has but recently been perfected to meet the requirements of the increased weight of cars, length of train and high speed. This remarkable piece of mechanism weighs four hundred pounds, has twenty-two valves, and performs sixty-four functions with five movements of the engineer's brake-valve.

The shops themselves are in a state of perpetual evolution. There is not a device nor a machine in the place that has not been improved in the last five years.

This has been the system, the spirit, of the Westinghouse Air-Brake Company from the beginning. While he was developing the air-brake Westinghouse used to be in the shops every day, among the workmen, talking with them about what he wanted. They helped with their suggestions and followed his.

In fact, the engineering department is the busiest of all. Its activities reach out all over the country.

More than a hundred men are out in the field all the time, making sure that the air-brake is giving the service intended and referring new difficulties back to the home office for solution before conditions have time to develop a serious grievance on the part of users.

The field men are constantly giving instructions to individuals and lecturing to special apprentices, engineers, firemen and trainmen on the handling of brakes in trains, care of brake-equipment and so on.

The company has an instruction-car which has traveled more than 150,000 miles and in which 340,000 railroad employees have been examined on air-brakes. Two dynamometer cars in charge of expert operators are in constant service conducting tests and giving demonstrations in connection with the science of braking. This service is free to the railroads.

Here in the test-department any given set of conditions in any problem that may come up, can be reproduced and results of experiments measured and recorded. The equipment includes a full-sized model of the automatic empty and load brake which so greatly increased the capacity of the New York subway.

After all, the most interesting part of Wilmerding is the men who run it. They have a veterans' association, eligibility for membership in which includes twenty-one years of continuous service for the Westinghouse Air-Brake Company.

The veterans' association has four hundred and fifty members; that is, no less than ten per cent of the total present number of employees has seen twenty-one years or more of service. And as the plant was, naturally, very much smaller twenty-one years ago than it is now, you can see that much more than ten per cent of the number employed have stuck to their jobs.

First Employee Still Working.

The secretary of the veterans' association is Christopher Horrocks, the first man ever employed by George Westinghouse when he started in the business of manufacturing air-brakes in the fall of 1869. Horrocks's first day in Westinghouse's employ was occupied in putting up line-shafting in the first shop, which was on Liberty Street, in Pittsburgh. He is a machinist by trade and since he put that shafting up has been working steadily away at some machine or another. After forty-eight years of it he is still as spry as any apprentice, and his muscles are so

hard you could clinch nails on 'em. If Jess Willard is looking for somebody to pick on he is respectfully referred to Mr. Horrocks.

Horrocks is full of reminiscences of Westinghouse as, indeed, all the old-timers are. The inventor of the air-brake must have been a model employer, for he appears to have been canonized by unanimous consent of his workmen.

On his part Westinghouse always showed the liveliest interest in his men. One of the few public dinners he attended during the later years of his life was the annual affair of the veterans' association.

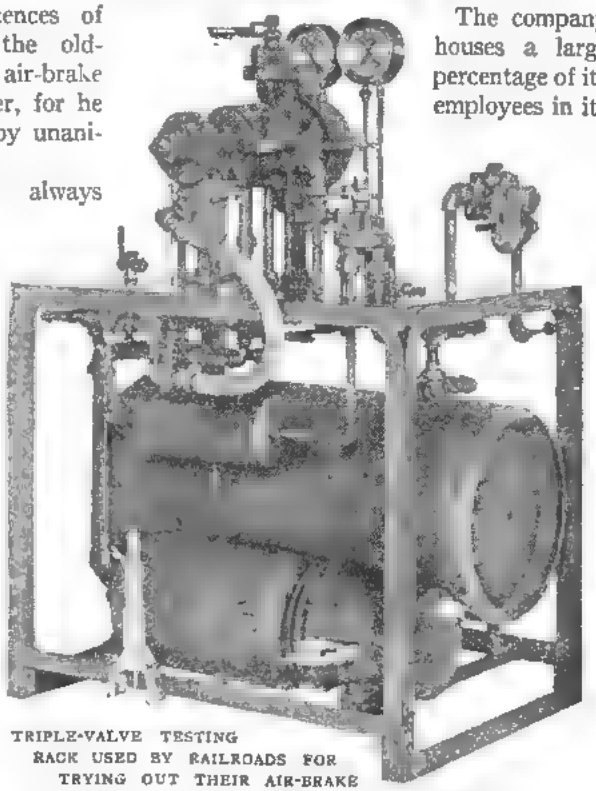
In addition to the veterans, there are a good many men who have been in the Westinghouse employ for ten, twelve, and up to twenty years. They are a thrifty, frugal lot, all well-to-do, for they have always earned good wages and have had steady work. Many of them have sons in the shops.

Lots of Pensions and Benefits.

The works at Wilmerding have all the frills that are to be found on the most up-to-date railroads, and then some. There is compulsory retirement at seventy years of age, pensions, relief department, sick and death benefits, pensions to dependents, and a compensation department to comply with the Pennsylvania law.

Then there is an apprentice system, a Y. M. C. A. with the second largest membership in Pennsylvania, a brass band, athletic association and all the rest of it.

The company houses a large percentage of its employees in its own property at rents about half those charged by other landlords in that vicinity. This is an advantage of some importance to the lucky ones who benefit by it, for the rents in the Pittsburgh district are very high.



TRIPLE-VALVE TESTING RACK USED BY RAILROADS FOR TRYING OUT THEIR AIR-BRAKE EQUIPMENT FROM TIME TO TIME IN ORDER TO INSURE PERFECT OPERATION.

HOW WE ARE DOING "OUR BIT."

BY PETER E. DUNBAR,

Conductor, Passenger-Train, Main Line, Union Pacific Railroad.

MANY of the traveling public, I find, complain of the crowded condition existing, not only on my train, but on every train throughout the country, never realizing that every possible effort is being put forth by the carriers to supply first of all the needs of the government.

I find that a short talk with these patrons of the Union Pacific Railroad, explaining the situation, invariably makes them enthusiastic believers in the railroads. I am sure that many of them are now cooperating with the railroads who otherwise might have held back and continued to criticise the transportation lines of the country.

"ONLY ANOTHER BUM."

BY CHARLES W. TYLER.

The Next Time You Meet a Seedy Wayfarer, Do You, Too, Think of Pop's Day-dreams and Pop's Boy.

I AM a locomotive fireman. I have been a little of everything else, too. But my place is on a big road-hog up ahead, with the open country stretching out before us. That's where I belong. I'm a boomer.

Somehow the railroad game is a thing that has got into my blood as nothing else ever has. Even when I was a kid back on that stony [illegible] England farm, hoeing a hard old row of witchgrass out of a side-hill cornfield, my [illegible] were of mighty, panting engines and the mysteries of things out around the bend where the lazy smoke-clouds hung.

I may climb off an engine and be gone a day, a week, a month, or even a y perhaps; but always there is the longing to be back. I want to feel the whip and slash of the wind in my face, know the bark of the exhaust, hear the whine of the injector, drop to the deck and again fight the hot breath of the fire-pit.

So when somewhere out along the way I meet a wayfarer now and then, who, before the weed-growths of broken men fastened upon him, had been a brakeman or a switchman, or had, in his yesterdays, "sat in" at the key or the throttle, or, perhaps, had been a fireman, I always remember my day-dreams when I was a kid—and think of Pop's boy.

And, after all, day-dreams are men's solace, whether they are looking ahead or backward in the greatest game of all. Castles of the air. Pop built them all through those gray years which I shall refer to later on.

His boy, too, built them when first he knew the longing to be out under the smoke-clouds that faded up around the bend; he must have known them again in those other years when he was down—when the visions came of a new grip on things, of a new beginning, the day-dreams of broken men.

It was in the yards at Williamstown, in the winter of 1912-1913. The night before this story opens I had been hustled out on a short call at Fitchburg to relieve a fireman on one side of the Ayer-Williamstown job, west-bound.

It was somewhere in the neighborhood of eight o'clock in the morning when we set our train off and called it a day. I scoured around and finally scared up a feed at a sleepy old restaurant—the only one I could find down-town—and then crawled in for eight hours' rest in one of the bunks of our caboose.

I don't remember the exact hour, but it was some time after dark when they dug us out for the return. I wrestled through a second meal at the local beanery, fortified myself with four sandwiches and a wedge of pie in a paper-bag, then set out for the roundhouse.

My running mate in the cab was an old hogger with rights enough to have been pulling one of the varnished hummers; an uncommunicative old rail, grown gray and seamed in the service, who ran an engine his way, expected you to do the firing your way, and was willing to let it go at that.

The old-timer has registered off for his last run, and joined others of the boys Over

Yonder. His name does not matter; I shall refer to him as "Pop."

Previous to our backing out on to the table it was discovered that somebody had stolen Pop's torch. A thorough search failed to reveal either it or any clue to the culprit. Also, some benighted son of a sea-cook had walked off with my pet scoop—a No. 3 worn down thin—and my long hook.

Therefore, by the time we had our engine out on to the lead, neither Pop nor myself was in any mood to be tampered with. The old freight-hog was spotted at the water-plug with two motions, a sudden start and a sudden stop.

While I was up on the tender taking water, Pop decided to go back and have just one more look for that torch.

He hadn't returned when I scrambled down over the coal to the deck a few minutes later. Neither was our head-end man in sight. But hunched up close to the boiler-butt was the dim outline of a man.

The cab was dark, except for the gage-lamps and what little light shone through the cracks around the fire-door, so it wasn't till I had jerked the latter open that I got a good look at our passenger.

He was a bo if there ever was one—unclean, unshaven, gaunt, ragged, and shivering. He didn't say a word; just stood there looking at me. His appeal was in his eyes.

But I wasn't reading eyes then. What patience I'd started the night with had been scattered along the trail of that pet scoop and the long hook.

"Well, what do you want?" I growled, glad of the opportunity to take my grouch out on some one.

"I—I j'st want t' get warm a little—old-timer"

His teeth chattered as he said it.

Something in the way he answered caused me to turn on him a more apprizing glance than I had previously given him. It *was* a bitter night, even in its bleak beginning. It had been trying to snow, but was too cold for that.

For the first time, I think, I was really aware that this man was clad only in a threadbare suit of the lightest material, while beneath the half-open lapels of the collar he had turned up about his neck, I caught a glimpse of a summerish white shirt—once white, I should say.

My hurried summary convinced me that he was just a harmless, hungry, half-frozen bo. And no place that I know is more dreary in winter than those flats up there west of the Hoosacs. But I had troubles of my own just then.

I knew that we would probably get all the cars we could stagger out of the yard with; for after the first five miles of slight grade to North Adams it is all down-hill, practically right into the East Deerfield yards, where we would reduce tonnage for the forty-mile drill to East Gardner.

The old hog wasn't any too free with her steam; accordingly it was up to me to get a heavy fire in her, preparatory to the everlasting mauling Pop would hand her works going to the West Portal.

"Get up out of my way, then!" I flared. "Come on! Climb over in front of my seat-box and lean up against her jacket. Look out for those lanterns in there; don't walk all over them!"

And I grabbed for the door-chain with one hand and reached for my remaining short hook with the other.

Pop showed up a few minutes later with a (borrowed?) torch; still in a nasty temper, though, because of the loss of his own. Also, at this juncture we heard the voice of the shack calling on the gods of the universe to awaken our black, benighted souls to the fact that he had been out there at the switch waving us a "come-ahead" motion for four hours and a quarter.

By the time we had kicked our caboose down the lead and backed in on to our train, I had half-forgotten our friend of the road. Pop grabbed his long-neck oiler and his newly acquired torch and climbed down through the right-side gangway, still talking to himself. I glanced at the glass, gave the blower-valve another turn, and reached for my scoop.

When I straightened up the bo was standing beside me.

"You'd better climb off!" I snapped. "We're going to get out of here right away. We're not allowed to have anybody

in the cab. Sorry!" But he didn't move. I stood there waiting. It seemed a long time before he spoke. His voice was low, and it shook just a little.

"Fireman," he said, "I want t' go t' Boston. I've bummed it all th' way fr'm Seattle. I come in over th' West Shore this mornin', and caught a drag out o' Rotterdam as far as here. An' so help me, I'm down an' out — cold! Can't yeh square me f'r a lift east a piece?"

"Well," I said, "I don't know about that. Carrying bums is taboo in the first place—clear and cold; and when it comes to entertaining you right up here in the cab, why, that's spreading it on pretty thick. There have been a lot of the American leisure class trying to lay something over on the engine crews on this division lately.

"And, further than that, our eagle-eye has declared war on the world. Somebody stole his pet torch, and he's broken off diplomatic relations with the whole works. He wouldn't let the King of England ride with us to-night."

But the bo persisted. He hesitated uncertainly a moment; then he went on:

"Yes, yeh got me right! I'm a genuwine Weary Willie! A vag! J'st a—*bum!* That's th' catalog, all right—measured 'n' mugged. One flash a' I'm struck f'r what I am—one of Cox's reg'lars. *Unemployed!* An' *I*—am goin' home! Huh! Look at me!"

He spread his palms in a gesture of absolute surrender to the burden that was on his soul.

"Can't quite get it, eh? Yes, it does sound queer—comin' fr'm a bo don't it, friend? Folks don't ever think of boes in connection with such things as homes an'—an' womenfolks—th' kind like yeh mother was, an' yeh wife, m'be — very often, do they? No. A bo is a bo—that's all. That lets him out accordin' t' brother man.

"A vag is a houn' dawg a mongrel houn' dawg. There is good 'n' bad 'n' medium—but he's more or less human—down where th' best of 'im plays second fiddle to th' hell in 'im. Some folks gets th' square in a guy mixed up with th' yeller in 'im. I did—an' as a result quit under fire.

"But I'm goin' back, pal! Goin' back!"

For an instant his face was radiant.

"Three thousand miles is what I've done so far—on th' rods, th' decks, th' blinds—beatin' my way over every mile; gettin slugged 'n' kicked 'n' ditched more times than I can remember, because I didn't have any silver t' cross th' palms o' th' shacks when they caught me ridin' 'em.

"But I took th' gaff an' come back grinnin'—every time—an' to-night is th' first time I've asked a soul f'r a lift; you can bet I wouldn't now, only it's come where I got t' have a little help—or I don't ever make it. I'm plumb gone t' pieces. I ain't had a set-down an' a real flop since—since—

"Aw, but what's th' good o' me handin' you all this hard-luck sob stuff; it's nothin' but a 'Punk Kid's' rotten spiel, anyhow, is it? With hunger pains, though, an' cold—with an empty stomach fr'm sun-up t' sun-up, an' newspapers tied on to yeh underneath—"

And with both hands he clutched at the breasts of his threadbare coat that I might hear the rustle of them—and know the truth. I was past being hard to convince, however, concerning the sincerity of his appeal, of his need for help to-night; but I waited for him to finish. I knew that he would feel better for my listening quietly till he was done.

"After a while a guy f'rgets he's a man. It take th' guts out of him, an' he loses what pride he's got left, an' he knuckles down t' bein' j'st a—bum. But there's some things he *can't* f'rget. He lives with 'em down in his soul, t'gether with a lot of kind o' barren hopes an' ambitions an' daydreams.

"An' then, old-timer"—he ended abruptly, hunching his drooping shoulders in a tired little shrug—"is when Jordan is a mighty hard old road."

"Yes," I said, "I guess it is."

My mind was already made up; but I shall never be absolutely sure whether it was entirely sympathy that prompted me here, or a strange desire to know more of the story I felt this bit of human flotsam was living. And, after all, it wasn't much that he was asking.

He could shovel over some coal for me

later on. I'd swear the shack to keep it under his hat till we got to East Deerfield, and by that time perhaps Pop would be in a condition to listen to a few words from a friend without getting dangerous.

"You win, bo!" said I, fishing into the seat-box for that paper-bag of dry sandwiches. "Climb back there and curl up beside her jacket. I'll fix it with the head-end man, and seeing that the hogger never shinneys over on my side of the hut, I guess you won't be bothered.

"And, here; tuck these dang-blasted rations under your belt. They're the best I've got, and I hope they don't kill you, feller."

I shouldn't wonder if it was a sort of a vote of thanks he attempted to spring, but again it was his eyes that told the things he wanted to say; his tongue stumbled; he concluded by suddenly asking for a drink of water. I handed him my jug from the locker on the tender.

It was after the "motor" left us near the East Portal Tower, having just hauled our drag through old Hoosac.

My stowaway was still asleep. The exhaustion born of those days and nights of cold and hunger and weariness, beating his way across the continent to a strange something that beckoned to him from old New England, was having its reaction now, as this bo, curled up there in that narrow, cylinder-littered bit of space in front of the seat-box, gave himself over with utter surrender to the realms of deep and merciful slumber.

The warmth of the boiler-butt had enveloped him; the hunger pains were dead; those remorseless accusations which had haunted him of the things that *might* have been—all were faded for the time in absolute oblivion.

The thrill of life, of health—the joy of just being alive, a part in a big, booming game—was in my own veins, as I swung up to the cushion for a brief recess while we thundered down the grade past Zoar.

It produced in my heart greater pity for this bit of human driftwood curled up at my feet—this derelict on the tide of wandering men, who had floated into the cab of the engine I was firing, back there at Williamstown.

Many a seedy wayfarer wears the rags of a vagabond not because they are his choice, but for the reason that men are prone to doubt him, which, after all, is only natural; so each day he finds it harder to fight back into the world of men worth while.

I thought of those things while I studied the gaunt shape of this man who could sleep so close above the thundering crash of the drivers as peacefully as a child. And sleep the fellow did—slept straight through our switching out and setting off six hundred tons at the East Deerfield yards without a murmur, and was still hitting it up when we were ready to beat it out of town.

It was while we were waiting for the head-end man out on the first car to throw us a "high-ball" that I decided perhaps it would be just as well to let Pop in on the stunt now as any time. I wasn't sure how he would take it, but there would be no good in putting it off any longer; so I plunged.

"Pop," I said, stepping over beside him, "I've got a deadhead in front of my seat-box—"

"A bo?" he demanded.

"Yes," I admitted; "and he's all in. He climbed aboard at Williamstown, half-starved and half-frozen. He hasn't got clothes enough on to drape over a scarecrow. The poor bum has been beating his way from Seattle; he wants to go to Boston. He's got folks there. How is it—all right to let him ride?"

I more than half expected that Pop would blow up and howl for the fellow to climb off, but he didn't. He didn't say anything for perhaps a minute; then he asked:

"Did you give him anything to eat, son?"

I explained that I'd given him the best I had, and that the bo, after eating it, had curled up and almost immediately gone to sleep—had been sleeping ever since.

"That's right; that's right, boy."

The reply was an automatic dismissal; that was all. The bo could ride.

I waited a minute, thinking perhaps Pop

might have something to say, some comment to add. The old engineman's eyes, however, went out toward the distant gray horizon-line and clung there. He didn't want to talk.

The surly, crabbing runner who had been at the throttle when we pulled out of Williamstown was gone. Up there on th right now was just an old man, tired, broken, wistful—an old-timer living again in those minutes, I thought, with memories of the past, of recollections something suddenly recalled to view.

But of those visions he saw somewhere Over There I made no speculation concerning them. He did not want to be disturbed.

I crossed the cab and gave the incident no further thought till later, when scenes which followed brought it all back to me. And I understood.

Through short snatches of conversation with old Fred Hanson's boy—our head-end man that night—which was carried on in brief bits of sentences during those intervals when I was not busy on the deck putting in a fire, I learned a little of Pop's story—why it was that in these shading years of his life he chose to hold an old rawhide extra instead of pulling some of the big passenger jobs that he might have had for the asking.

Always when you see an old rail sagging out of the cab of a great, grimy freight-hauler it is pretty safe to surmise that there is a story somewhere behind him.

The old fellows take the high-class runs, the regular-hours jobs—the through passengers, the "scoot-line" suburbans, the switchers, and some of the regular helper jobs.

It is the young runners who belong up under the black smoke of the whales, the battle-ships, the "Mikes," and the other big hogs of the freight-service. For batting merchandise up and down the pike is a baptism that must be theirs before they can take their place in the ranks of the seasoned vets later on.

Pop, so young Hanson said, had long ago foregone all claim to those rights which his seniority in the service gave him—had always stolidly passed up the opportunities which offered better runs and better hours, while with studied deliberation he had chosen first one and then another of the grueling, long-haul cross-country jobs which were from time to time posted for bids.

"It's only a few of the old-timers who really know all of Pop's story," young Hanson explained, as we pulled into the Irving middle to let one of the 218s that was late by us—"only a few of them, fireman. What I know I got from my old man, and that wasn't much, either.

"Maybe you've noticed it, Jack, how the silver-heads stick together—how they close up or blow up, as the case calls for, when some yahoo starts beefing about this or that, so and so's wife, or his children, or his troubles.

"You mighty seldom hear one of those gray vets airing any of the load he's carrying under his hat when the engine-house gossip starts. Most of the old-timers have been through the mill in some form or another themselves; they know when to head in and lock the gate—you betcha."

"But what about Pop?" I insisted. "Or is that on the shelf, too?"

"No-o, not exactly," the head-end man admitted; "neither is it a long story. Most of that kind aren't when it comes to summing them up in so many words."

I nodded, and glanced over to where Pop sat. He was still gazing somewhere off into that land of day-dreams.

The hum of the injector and the blatant note of the half-open blower was enough to cover the intent of our conversation, even from one who might have been listening from as close as the width of an engine's cab.

Young Hanson went on:

"When Pop was set up running, he had a wife and four children, all boys. It was the same old story, I guess: he had the best woman and the smartest sons in seven counties. Anyway, it was a family that always thought a lot of each other—were all pretty happy together and pretty proud of each other.

"Pop made a good running, and everything was clear and sunny. Then, like a thunder-cloud on the rim of a blue sky,

came the first blow. The two youngest boys were burned to death. They were alone in the house, and the place went with them.

"A little over a year later the third one was run over at a crossing, lost both legs, and died before they could get him home.

"The oldest boy was all they had then, and it seemed as though all the love they had borne the three that were gone they cherished on the one who was left them. It was pretty natural that they should entertain big ambitions for him—should want him to be a little better than the average—wasn't it?

"But you know how things like that usually turn out. Anyway, it was in his blood, I guess.

"He wanted to go firing.

"Did you ever know it to fail? His father and mother had planned a college-course for him—some of the big ones, too. But the youngster couldn't see it. He wanted to go railroading, like his old man.

"There was where the rub came. What is good enough for dad is a heap too low down for the boy a lot of times. It was in this case.

"They argued and pleaded, and sort of half-threatened some probably. But it was all no use; the boy had made up his mind. He wanted to go on the road—and he was *going* on the road. Pretty selfish, in a way, maybe, but you know."

"Yes," I said, "I guess I do—now."

And I thought of those longings and the day-dreams I had had myself, back there on that stony old New Hampshire farm, of the things out around the bend.

"Anyhow," the shack continued, "the boy had his way. But of that part right there nobody can much more than guess. Pop never talked about it.

"Still, it was pretty generally understood that there were words—almost the first real ugly ones the father and son had known from each other. They must have been pretty bitter—they were bound to be.

"The boy went out that night and never came back. It almost killed his mother then and there—did kill her, in fact, about a year later.

"Pop in the mean time almost went crazy. All of their boys gone, and not a word or a hand-clasp of good-by with one of them!

"In a night, almost, the two of them became an old man and an old woman. From a couple who were still young and happy at the half-way mile-post, or a little better, Pop and his wife suddenly looked out on the world that morning with gray and despairing age written all over them.

"Pop got a leave of absence from the road and began a search on a blind trail up and down the States, hoping somewhere to pick up a trace of his boy. And when he had to give it up, he came home and settled down to pulling these rawhide jobs. He thought it would give him a better opportunity, perhaps, to watch—having it in his heart all the time that, maybe, when his son *did* come, he would be one of the thousands of every sort who follow the iron way.

"For a long time after that, too, Boston, New York, Chicago, San Francisco, Seattle, and other papers carried an ad tucked away down in the corner where they run that personal column of 'Information Wanted':

> "Come home, boy; your mother needs you.

"Just glance down there some time, old-timer. You'll be surprised how many of those kinds of ads are in the papers every day all over the land. We used to watch at home just to see if Pop's ad was still there. It was, in first one and then another of the dailies, till the mother died.

"Haven't fired for Pop many trips, have you, fireman?"

I admitted that I had not—that this was the first time I had happened to be called to fire for this old runner.

"Well, then, you understand now why he didn't ditch your bo, as you were afraid he would. He's never kicked one off, or let one of the shacks if he could help it, since Al went away, and he's fed a pile of 'em—good, bad, and rotten.

"'They're somebody's boy,' he always says.

"And that lets 'em out.

"I didn't say anything when you asked

me to keep it under my hat that you were riding a bo up here in the hut, because I seldom do when it comes to talking about Pop's son. But now you've asked me I've told you."

And that was all that was said then.

There isn't much more to tell. The rest happened too suddenly for any detail to creep in.

Things like that do when something drops in the railroad game. Green eye on the block and all is well! Then—right off the bat, almost without a second's warning, something happens, somebody pulls a bone—we're into 'em all over! Or, maybe, they are into us.

It's like the boys in the trenches, I expect. You don't give much thought to getting it. It won't come to you. Then she comes—it's your turn.

The boys on the trains don't ever think they are the ones who are going to be in the next smash — not till that tail-end shows up right ahead, or there's an open switch, or somebody gets 'em on the hill.

Well, it was like that this morning. Everything was moving about as usual—and the next thing we were right into the side of a fast freight.

It doesn't make any difference just *how* it happened, or who was to blame. That isn't a part of this story. I am only dealing with the fact that the fast freight sideswiped us—raked us clean on the right side.

It was a nasty wreck, and it caught Pop fair and square. He didn't have a chance in the world to get out of the way. It came too quick—just a crash and a lunge, an instant of quivering uncertainty, and a slow settling together That was all.

Young Hanson and I took the limp, bruised body of the old hogger out of the crumpled mass of steel and wood and lifted him down through the gangway on the left side. The bo, himself pretty well shaken up, followed.

And then, for the first time—there in the sun-touched glare of the morning—the vag who had climbed into our cab the night before got his first fair look at the wrinkled face of old Pop.

For just a moment he hung in his tracks, staring down with unbelieving eyes at the old man of the road. Then one heart-torn word broke from his lips—only one:

"*Dad!*"

And he was sobbing a strange, wild grief over the silent form beneath him.

"My God!" gasped the shack. "It's Pop's boy!"

What a home-coming! What a reunion after the years!

A setting of snow and frost, the right-of-way of a big main line, two great, grimy consolidations, battered and torn, towering above two victims of the game of life there together, while hurrying and frantic trainmen came stumbling up the lone lines of somber-colored cars.

"Dad! Dad! Speak to me! Say yeh know who it is! Yeh do, don't yeh—your boy, your Al? Can't yeh hear me? Can't yeh? Look! Open yeh eyes—j'st a minute dad! *Now*, dad—*try!*"

Despairingly the prodigal grasped a handful of snow and pressed it to his father's face, brushed away a bit of crimson from a cheek, smoothed the thin, gray strands of hair away from the forehead; then gathered the body of the other closer to him, while still murmuring broken, hopeless pleadings, he buried his ear against the grimy jumper-front, listening for fluttering heart-beats.

And all the time he was crying in great, sobbing breaths for life where life was fast ebbing away.

"Gawd help me! Don't take him till he knows his boy is back—has come home! Spare him! Let him know me just once more—just once!"

It was some little time after the flags had gone back both ways, and our con had hurried off west toward the nearest station to put a call for help on the wires, that Pop's eyes at last fought open for an instant. It was the returning flash of strength that often comes just before the end.

Perhaps he heard that old, familiar voice calling to him from somewhere in the night that had closed about him—perhaps he did. I don't know.

Nevertheless, when those tired lids at last fluttered back, the first flash of the

eyes looked square into the face of the boy of his dreams—his son.

The recognition must have been almost instantaneous, for even in that first gleam of momentary return to consciousness a smile was forming where the tired lines had been for so long—a sudden transforming flood of contentment, the joy of a great load lifted.

It seemed, perhaps, longer than it really was before the lips shaped the broken thoughts that were there.

Then cramped and toil-stained fingers trembled, tried to reach out toward this great happiness that had mysteriously dawned; there was a half-spasmodic effort to rise, while faint and far away something low and wonderful whispered out to us who were listening to his message at the end—just a few soft words: "I—I knew you'd come—some time, son. You had to. I—I've prayed so long for for—*my boy.*"

And Pop was on his way to the loved ones who were waiting—Over There.

HOW WE ARE DOING "OUR BIT."

BY F. L. BURCKHALTER,

Superintendent, Portland Division, Southern Pacific Company.

THE loss of trained men, who are going into military service and accepting employment in other fields where prosperity is boundless and regulation unknown, presents perhaps the most serious problem confronting railroad officers to-day with reference to safe and efficient operation. An immense amount of effort and patience must be exercised in securing and training new men to perform the duties of men whom we have taken years to educate and who have now left our service.

Safety and efficiency in railroad operation depend primarily on employees having proper knowledge as to what is required of them and in no less degree on the honest observance of those requirements. The difficulties of the present situation can only be met by all employees, both new and old, honestly living up to their knowledge of the rules and regulations.

In the months of May, June and July, this year, compared with last year, we have increased our trainload an average of 7.6 per cent and our main-line engine efficiency in direction of preponderance from 91.7 per cent to 95 per cent. Fuel consumption shows an average decrease of 2.95 per cent in freight and passenger service. The number of tons loaded per freight-car averages 3.7 tons increase, and in three months we have used 5,034 less freight-cars than would have been required to load the freight offering at the number of tons per car attained a year ago.

BY R. B. SALE,

Engineer, Chicago, Rock Island, and Pacific Railroad.

I BELIEVE in cases where stock can be seen in time to stop the train before striking them we should stop, if necessary, to prevent killing them as the stock is valuable, if used properly, and if killed by the engine they are a total loss. I remember a great many cases where I have slowed down the train a little, giving time and saved several head of stock of various kinds. One trip on passenger train No. 43, I stopped several times and I figured I saved $600 worth of cows which certainly would have been killed had I not stopped.

Also remember another trip. I was on a special west with passenger, with about six hundred officers for United States army. In going through the I. W. W. district I was very careful to see that all of the bridges and especially the high and dangerous ones, were all in place before I crossed them. This for safety to the army.

KHAKI ON THE RAILS.

Railroad Men Now in the Army Find That Their One-Time Occupation Overlaps with Their New One.

BY FRANK KAVANAUGH.

FOR the first time in the history of the middle West people who watch the trains from their fields or country homes see the strange spectacle of a train shooting by that looks like a mixture of freight and passenger and is neither. First comes the engine, then a baggage-car or two, then several Pullman cars, followed by a few stock-cars and last of all the little red caboose.

In States where the law prevents the placing of passenger-cars ahead of freight-cars the new train looks strange.

During the latter part of September and the first of October more than five hundred such trains shot across the wheat-fields of the West until the farmers have grown used to the sights. One look and they say, "Soldier train," and go about their business.

"Perhaps Aunt Mary's boy is on that one," a farmer's wife muses, as she wipes her hands on her apron or wipes away a tear. The boys are going to war.

Troop-Trains Make Almost No-Stop Runs.

It's almost a no-stop run for a train-crew when one catches a soldier-train. Unlike the movement during the mobilization in 1898, there is no trouble with soldiers "pulling the air" and otherwise retarding the movement of the train.

It is understood that while *en route* the train-crew has authority on the train and the soldier recognizes a word from a trainman just as if it were from his superior officer. The train-crew reciprocates.

One of the finest orchards in the West lies between Kansas City and Topeka. Here apples grow so thick on the trees that each separate tree resembles a red-haw bush.

When the troops were being rushed to Fort Sill a trainload stuck just opposite this orchard. A hot driver-box on the locomotive was the cause.

Across the right-of-way fence a farmer, his wife and two sons were trying to save their crop of apples. Help is scarce in the middle West so scarce it can't be had. The soldiers looked longingly at the ripe fruit.

"We'll be delayed here about fifteen minutes, major," the conductor told the commanding officer. "Why not let the boys into that orchard to help the old man? He'll let them have all they can conveniently carry if they'll help gather a few. All right?"

Soldiers Gathered the Apples.

The major nodded and the conductor spoke to the brakeman. Two minutes later each tree in the orchard held two or more soldiers and the apples were falling as rapidly as the votes of an unpopular candidate on election day.

When the engine whistled to warn the soldiers to entrain, more than half the apple-crop had been neatly piled under the trees and each soldier had apples enough to do him for a day or two,

On the next trip back the conductor's train stopped at a little station near the orchard. The farmer came aboard the caboose bearing a big sack on his shoulder.

"Brought you a couple of hams I cured myself. Say, that was a bright thought of yours, getting those soldier boys into my

orchard. If it hadn't been for them I'd have lost four or five hundred dollars' worth of fruit."

And as he was going out the door he turned and called back:

"When your family's eaten all these hams let me know. I've got more in the smokehouse."

Why They Looked Like Hoboes.

When the mobilization of the drafted men came, the government had no clothes to furnish them and most of the men wore their citizen clothing. They picked their oldest coats and trousers, knowing well that when the government issued outfits they would have no more use for their private outfits until a certain gentleman whose normal habitat is somewhere in the immediate vicinity of Berlin was made *nichts kommt heraus* or something like that. So a lot of the men looked like hoboes. Crap and card games were played to while away the monotony of the journey.

A Union Pacific conductor caught two soldier-trains one after the other, from Kansas City to Fort Riley—or Camp Funston, as its new name is. In passing through the cars he smiled indulgently on the boys playing cards or shooting "craps."

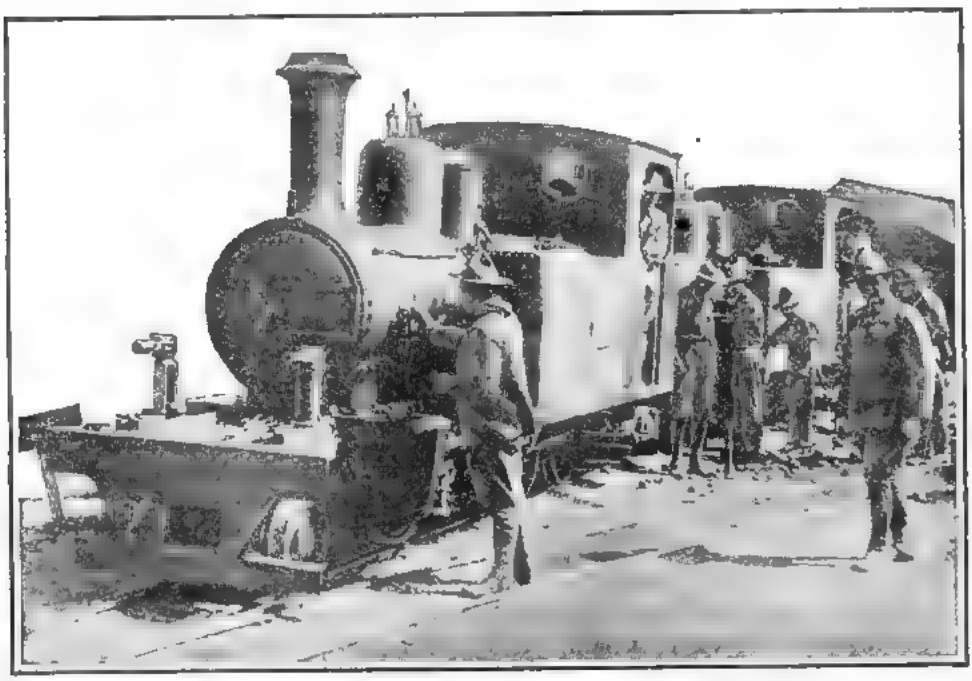
Although gambling in any form is a heinous offense against the law in the state of Kansas, especially when played on a train—a law passed when the three-card monte men "worked" western trains—the conductor didn't appear to see when a ten-cent piece was passed from one soldier to the other as a result of the game.

Spotted a Sharper.

On the second trip out, one of the faces of a crowd of players seemed familiar to the trainman. Somewhere or other he had met that man before.

After a time he remembered. It was the last stop on the trip before, just a little way from Camp Funston. The man had left the train, and when the conductor cautioned him for fear he would get left, he had replied something about "not wanting to fight."

The game was in full blast when the last



HERE'S HOW THEY LOOK WHEN THEY GET THERE. A RAILROAD MAN IS ALWAYS A RAILROAD MAN, EVEN WHEN JEANS GIVE WAY TO KHAKI, AND HE CAN'T KEEP AWAY FROM THE ROLLING-STOCK

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stop came. The conductor stood in the doorway, idly watching. The man with the familiar face yawned and remarked something about being tired and quitting the game. He stood up and started toward the door. The conductor blocked the way and spoke quietly to a sergeant.

"This man was on a train I had several days ago, and left it before we reached Funston. I think he's a card and dice sharper. Get a couple of your men to search him and find out who he is."

They found his pockets full of money and loaded dice. The conductor pulled the signal cord, the train stopped; and, pointing to the river, the conductor said:

"There's a good lot of water out there and a ducking wouldn't hurt him. Get all the money he has and do your duty, boys."

The man was ducked, stripped and left. How he passed the night and where he secured more clothing didn't appear to worry the conductor nor the soldiers.

Captain and Sergeant Fixed the Flue.

Almost any of the regiments which will eventually go into foreign service have railroad men enough in their ranks to man a good-sized railroad. Coming out of Dallas, Texas, the engine on a soldier-train developed a leaky flue and it was impossible for the fireman to keep steam.

Just now, when every piece of tractive force on all the roads is worked to the limit, a new engine could not be secured at once. A captain in a national guard regiment which the locomotive was pulling woke from a sound sleep in his berth and asked the reason for the stop.

"Engine has leaky flue, sir," the sentry replied.

The captain went forward and looked into the firebox. A thin little stream of water shot from one of the flues

"Got a pinch-bar here?" asked the captain.

"Two," the engineer replied.

"Go back to the cars," said the captain to a sentry who had come forward, "and ask if there's a man back there that's had any boiler experience."

With that he commenced taking off his uniform.

"Lend me your overalls," the captain requested the fireman.

A sergeant came forward and reported

"Ordered to report to you, sir," he said.

"Boilermaker?" asked the captain.

"Three years helper, sir," the sergeant replied.

"Get into the engineer's overalls and give me a hand, then, sergeant. We'll get this flue fixed soon."

It was a ticklish, hot job, but within half an hour the leak was stopped and the sergeant and captain, sweaty and black wiped their faces, while the fireman replenished the fire and started the blower.

"Where'd you work?" asked the captain of the sergeant, as, dressed and washed, they made their way back to the cars.

"Smithville, on the Katy," the sergeant replied. "And you, sir?"

"San Antonio, Southern Pacific," the captain said.

The sergeant turned away, but the captain called him back.

"Got a suit of cits, sergeant?" he asked.

"Shirt and trousers, that's all, sir."

"We'll have a layover at Reno while they're transferring us," the captain said. "Get into your citizen clothes and come up-town and have dinner with me. We can't eat together in these clothes, but I've got a suit of cits back there and we'll have one regular dinner together anyhow."

Khaki-Clad Switchmen Helped the Stude.

A student brakeman was "sweating blood" as he switched the house-track at a station, where a soldier-train was held up to meet another train. The soldiers were allowed to walk around while the train waited. Two of them walked over to where the local was switching. The student, obviously nervous, consulted a switch-list frequently.

"What 're trying to do, old man?" asked one of the soldiers. "I was something of a switchman myself before I donned the brown rags."

"The rest of the crew are over there eating and I and the fireman are doing all the work. I've got to set those two loads

in on the train, spot that G., H., & S. A. at the elevator, that N. & W. at the platform and those three home empties to load with corn over where those wagons are waiting."

"Easy," said the soldier. "You get on the engine and help that fireboy. Come here, Bill," he called to his soldier comstreet each looked the other way, and if they had to meet in line of service they used the politeness that cuts worse than a new knife. The conductor nursed a grudge and the despatcher nursed something similar.

Then the men were called out, the conductor going with a contingent from one

GOOD-BY, MR. KAISER, GOOD-BY! UNCLE SAM'S RAILROAD BOYS HAVE CLIMBED INTO THEIR GO-GETTER CLOTHES, AND THAT MEANS 30 FOR YOU

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panion. "Show 'em how they do it on the Wabash."

Ten minutes later the loads were pulled out and the cars spotted as per the switch-list

Handing the list back to the student, one of the soldiers said:

"Glad you gave us the chance to get our hand in, my boy. We're switchmen and have been railroading on paper ever since we joined. Our lieutenant, over there, was one of the slickest yardmasters that ever tied a can to a stinger before he got his commish."

When "DS" and the Con Fought.

Just after registration day or about then, a certain train-despatcher on a Missouri railroad had occasion to "jack up" a conductor until all diplomatic intercourse between them was severed. If they met on the end of the division, the despatcher from a town he called home at the other end. They went to the camp on separate trains and neither thought nor heard of the other.

The citizens at each town, when the men departed, gave each of them, along with companions, a wrist-watch, to the great disgust of the railroad men, who were familiar with the watches carried in their pockets.

They are detailing men for kitchen duty. From carrying way bills to peeling potatoes and helping a cook who used to be flunky in a fifteen-cent-a-meal dump is a far cry, but it came and the conductor was one of those chosen shortly after the company was organized.

He stood a day of it well, until along in the afternoon, while slicing bacon for supper, he spied a man, sitting on a box near the cook-shed, watching him. In the eyes

of the watching man was a gleam of triumph. He sat there and watched and once he smiled.

Then, when he happened to turn his back for a moment, something hit him squarely in the back of the head. He looked around and picked the something from off the ground. It was a silver wrist-watch. The despatcher, for that was the man who watched the conductor, placed it carefully in his pocket.

Turn About Is Fair Play.

Three days passed. This time the despatcher was detailed for kitchen duty. After drill the conductor occupied the vantage of watcher, and hunted up a brakeman who helped him.

It was fun to watch a despatcher scrub a pot. It made the hearts of the trainmen glad, like the check on payday.

A bugle-call caused the watchers to turn. Half a second later the brakeman uttered an exclamation, turned and picked up a silver wrist-watch that had hit him in the back.

The conductor smiled and said nothing. The despatcher scoured a pot and did likewise. But the despatcher watched the conductor closely.

An officer was crossing the company street near the box whereon the two trainmen sat. When he was in line with the box and the kitchen the conductor turned his back on the man scouring a pot.

Then the conductor dodged and lay almost flat. A silver wrist-watch flew across the intervening space, over the prostrate conductor and found a mark on the breast of the officer. It stunned him for a moment, but he recovered.

Covered "D S" Up.

"Who threw that?" he demanded quickly.

The conductor looked at the despatcher, scouring a pot, and a great pity took possession of him. He saluted the officer in the regulation manner.

"No one threw it, sir," he said. "I was walking and fell and it flew off my hand. I'm sorry, sir, it hit you."

The officer was mollified.

"That's all right, private," he said, handing the silver wrist-watch back to its owner.

The despatcher heard the conversation and went on scouring a pot. That night the two men went down-town and had an ice-cream soda together. Walking out to camp the despatcher pointed to a night bird perched on top of a telegraph post.

"Bet you a quarter I can knock that bird off that pole with my wrist-watch."

"Bet you can't," retorted the conductor.

The despatcher let fly and missed.

"Same bet with your watch," said the despatcher.

"Sure thing," the conductor replied.

He, too, threw and missed.

"We're even on those bets," the conductor remarked as they walked on.

"And on everything else," added the despatcher, and the lights of the camp came in view.

A Pass for Tew Cannon.

Tew Cannon, operator for western railroads for several years and now a soldier in the National Army, missed the train bearing his contingent and wired the superintendent he had worked for last the circumstances and requested a pass. The superintendent wired the agent: "Pass Tew Cannon, to Camp Funston," expecting the agent to make out a regular form of telegraph pass, but Tew took the message himself, stamped the telegram and boarded a train.

The home-made pass was as good as gold on the home road, but when the operator changed roads the conductor he presented the telegram to, looked over the operator, who is a small man, very carefully, and asked:

"This for you?"

"Yes."

"I'll take you to Funston on it," the conductor remarked as he punched a hat check and placed it in the operator's hat, "but you look more like one twenty-two-caliber target rifle to me. Or," he added as he turned away, "you might pass for the cap on an old-fashioned muzzle-loading shotgun."

When Camp Funston was first organized

the Union Pacific built additional yards and put a switching-crew at work. That with the many trains arriving and leaving made the yards a dangerous place for a stroll.

Several soldiers were injured and one met his death on the tracks. As the soldiers were not uniformed it was impossible to tell who was a soldier and who was railroader.

At length sentries were placed along the tracks and no one not an employee of the road was allowed to pass. Employees were expected to secure a blue card from the station-agent and wear it in their hats at all times. Persons without the blue card in evidence were summarily removed from the tracks. No excuses were taken.

J. P. Carey is superintendent of the Kansas Division of the Union Pacific and carries himself with the dignity due the position. While superintending the handling of the troops one day he stopped at Funston to inspect newly made tracks. He was not wise to the order.

RECRUITING AMONG THE RANKS OF RAILROAD MEN IS STIMULATED BY DEMONSTRATION CARS SUCH AS THIS, EQUIPPED AND SENT OUT BY THE CORPS OF ENGINEERS OF THE UNITED STATES ARMY

"Get off the tracks and stay off," demanded a sentry as he collared the superintendent, who was walking along a siding.

"But I'm superintendent and I'm inspecting the tracks," Mr. Carey expostulated.

"I don't care if you're president and own the road," said the sentry. "Off you go. If you want to stroll on the tracks go get a blue slip from the station-agent. Git!"

And Mr. Carey went over and secured a blue slip from his agent at Funston. The sentry walked his beat. He smiled and mentioned to the man he met at the end of his beat:

"I've railroaded five years and that's the first time I ever had a chance to order a division superintendent around. Soldierin' ain't so bad after all."

A special, carrying a large contingent of National Army men, was flagged by a man with a bloody rag around his head. In the road that ran parallel to the track was an overturned automobile.

"My brother's under there, would you help get him out?" the man told the conductor.

The car was lifted from the body of a young man, and the body was placed aboard the train.

"My brother was drafted and I was taking him to the station to catch this train, when the car overturned," the man explained. "Do you suppose they'll take me instead?"

The conductor was doubtful, but a telegram to the district board gave the young man permission to go in his brother's stead, men being scarce in the sparsely settled Kansas county. The day after the funeral of his brother the young man reported at Camp Funston.

For such is the spirit of young America, thank Heaven!

MAKE WAY FOR THE LADIES!

BY ELMER EDMOND JOHNSON.

NOTE: Eastern roads employing thousands of women to replace men called to the colors, says a newspaper headline. Well, here's looking at you, girls!—AUTHOR.

SADIE Beck is throwing switches in the yard,
Helen Hughes is cleaning coaches with her mop,
And in every nook and cranny there's a girl, old maid, or granny
Mending cars or wiping engines in the shop.

Nellie Cook is now a brakeman on the road,
Gladys Wise is selling tickets at LaGruve,
And wherever you may ramble, you will see the females scramble,
At the task of keeping traffic on the move.

Bessie Brown is pounding brass at Eagle Lake,
Katie Krause is trucking baggage at Verance,
And at every railroad station, there's a lady on probation,
To relieve the agent when he's called to France.

They are filling up the railroads' weakened ranks;
They are players in a mighty vital game.
We may be inclined to joke them, and with raillery to poke them,
But we're glad to have them with us just the same.

THE RAIL AND WIRE IN TIME OF WAR.

AMERICAN RADIO SIGNALERS RECEIVE OBSERVATIONS OF AVIATORS ABOVE THE ENEMY AND TRANSMIT THEM TO "PLOTTING-ROOM" THIS PORTABLE OUTFIT CAN BE ERECTED IN 60 SECONDS.

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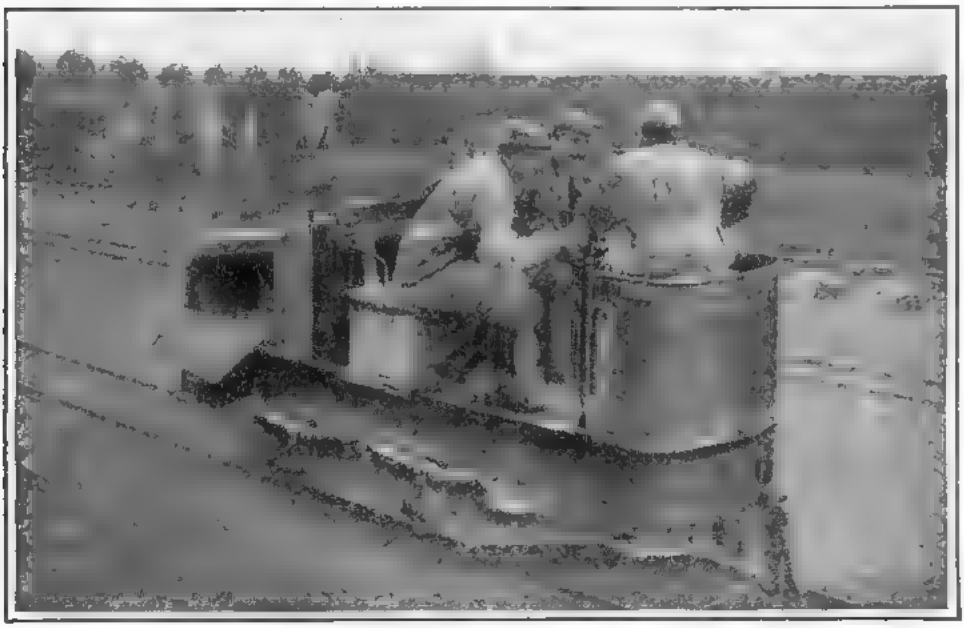
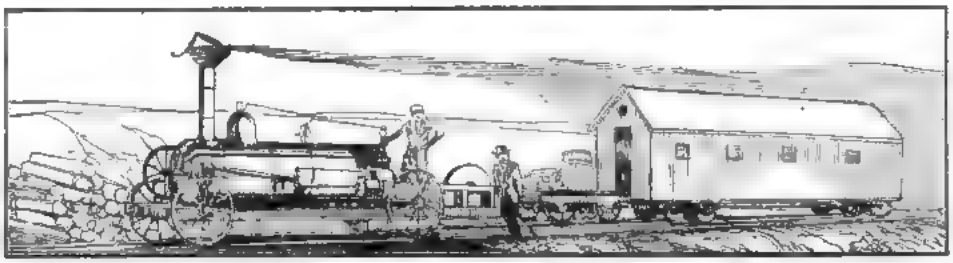


GASOLINE ENGINE USED ON BATTLE FIELDS OF FRANCE. IN THE BACKGROUND NARROW-GAGE RESERVE TRACKS BUILT IN SECTIONS AND LAID DOWN AS LINES OF COMMUNICATION ADVANCE.

Tales from the Knights of the Railroad Round-Table



RUNNING A R. R. SAWING MACHINE.

BY CHARLES S. GIVEN.

JAMES BLISS, veteran conductor on the Shore Line, was in his element. He had discovered a tintype of an old railroad sawing-machine, and was exhibiting it to the boys in the employees' room.

"What do you call that contraption?" one of the younger men asked.

"That, my son, is a picture of an old wood sawing-machine that used to amble up and down this pike many years ago," Bliss replied.

"What? You don't mean to say that outfit wiggled over the pike all by its lonesome do you?" the man questioned incredulously.

"Sure thing, my boy. It was a common sight in the days when wood was the only locomotive fuel to see a sawing-outfit run over the line," said Bliss.

"Doesn't look as if she'd go much faster than a mile a minute, anyway," said the man, laughing.

"Well, hardly. Their usual speed was from four to six miles an hour," Bliss informed him.

"What did they do with that young house on wheels? That little kettle didn't haul that along too, did it?"

"It certainly did, although I have known of instances when they had high old times getting up a hill.

"In the old wood-burner days, on a road of several hundred miles, when there were quite a number of locomotives, they burned an enormous quantity of wood, as I don't know of anything any heartier than an old wood-burner when she was working hard.

"It would have required a small army of men to saw it by hand and these self-propelling sawing-machines were invented to do the work.

"You would see large woodsheds at almost every station on the line, as you could never tell when an old 'hay-burner,' as the boys used to call them, would get out of fuel. If stuck out on the line the boys were in the habit of tearing down the old board fences to keep steam enough to get them to the next town. So, to keep the fences intact, it was customary to have a woodshed about every ten miles.

"The farmers along the line would contract to cut and haul the wood to the right-of-way and wood-trains would collect it and distribute at the various sheds. 'Twas a common sight to see hundreds of cords

of wood piled up along the line between stations and at the sheds. Some roads had as many as a dozen machines. We had four on our hundred and eighty miles.

"The boiler set on four wheels, and a little four-wheeled flat-car was used to carry the barrels of water and pile the wood on for use when they were running from one station to another.

"The crews lived in the house-car, which was hauled behind the flat. One end of the house-car was used for cooking purposes and the remainder for bunks. Generally a wife of one of the crew went along as cook; otherwise, one of the men performed.

"The engine was geared so that you could shift the gear from the circular saw behind the boiler-butt to the forward pair of wheels for drivers. These machines were equipped with whistle and bell. I never saw any brakes on any of the house-cars as they had no platforms, but there was a lever-brake on the flat-car.

"The engineer did his own firing, and was sawyer as well. The foreman acted as conductor and they run on orders the same as any extra train.

"As soon as the wood-trains collected the wood in the spring the sawing machines started out and generally were busy all summer. At some stations they would set an extra flat-car behind the machine and as the wood was taken away from the saw throw it on the flat. When it was loaded they would haul it to the shed and the whole crew turn to and throw it in. They sometimes hired an ox team instead to cart the wood to the shed.

"As the wheels were all small the draw-bars were considerably lower than on ordinary cars, so when they hauled a loaded flat-car they coupled with a chain, and when they shoved it back, placed a sleeper in between. On account of the draw-bars being placed so low they never coupled in with a train when going any considerable distance.

"It took quite a number of wood-passers to keep the saw busy, for in some places wood was piled six or seven tiers wide, so there were quite often eight or ten men in the crew.

"I used to have a cousin, Jim Bliss, who had fired on the road and in summer-time he was engineer of one of these sawing-machines. His foreman was a strapping big Irishman named Patsy Riley, ready at all times to laugh or fight.

"Riley could neither read nor write, so the responsibility of running the outfit over the road rested on Jim, although Pat prided himself on being the conductor on such occasions, and always strutted round with an old conductor's cap hung over one ear. He was rather overbearing in his talk and manner, and Jim and he didn't get along very well together.

"There were no grades, when the rails were dry, but what they could pull over; but on a wet rail they couldn't always make the hump.

"Jim's outfit had been at work a couple of weeks when the incident I am going to tell you about happened. Jim had received his orders the day previous to run from Waltham over to Glenburn, eleven miles, and to be ready to start as soon as the work-train went by, which would be a few minutes past eight. They would have until 9.45 to make the six miles to Coleville where they would take the siding and wait for Nos. 7 and 10; then they would have an hour and a half for the remaining five miles, which would be ample time if they negotiated the hills all right.

"Parker's grade was the worst, but Jim had hauled his outfit over it more than once and did not see any reason why he couldn't again. But he was reckoning without taking Pat's birthday into consideration. Pat informed him that morning that he was thirty-six years old at ten o'clock in the forenoon, and had never been licked yet and he never expected to be either.

"Pat did not intend to let his birthday pass without celebrating it properly, so without saying anything to Jim he had invited a number of his friends at Waltham to have a free ride over to Coleville with him. They accepted his invitation to the number of ten and were on hand and ready for their outing when the work-train went through at 8.15.

"Pat stood at the front end of the house-car, pulled out his watch and, shouting,

'all aboard!' he passed the high sign to Jim. The switch was opened, Jim gave her steam and the 'train' pulled out for Glenburn. They made the run without any difficulty as the road was practically level and pulled into the siding to clear Nos. 7 and 10.

"No. 10 was forty minutes late, and when they arrived other trains blocked Jim from pulling out until 2.30 in the afternoon. Then there was an interval of two hours before any more trains were due.

"Promptly at ten o'clock that forenoon Pat tapped a little keg which he had provided for the occasion and his invited guests began to drink to his health. Before pulling out at 2.30 there had been several little mixups between the men in the house-car. Pat was beginning to feel his oats.

"Now it's undulating track all the way between Glenburn and Coleville, and one grade a mile long, that would tax the hauling power of the little engine to the utmost; but Jim had always been able to pull them over and didn't see why he couldn't again, so he wasn't worrying any.

"This grade is a little over three miles out of Glenburn and the hump is only three-quarters of a mile from Coleville and down-grade into town. Under ordinary circumstances Jim could have made the grade as he had many times before, but on this trip he was hauling ten invited guests and the extra load was a little too much for the kettle on wheels. She lay down about three hundred feet from the hump.

"Jim trigged the wheels so as to hold them, then had a little argument with Pat. He told Pat to rout out his crew and guests and all turn to and push, and he'd try and pull the outfit over.

"Pat replied:

"'Not a one of me invited guests is going to work their passage and play horse. It's your business to pull and we'll sit right here till the cows come home and let you do it.'

"'I can't pull the car over with all that gang in there,' said Jim. 'Order them out and I'll back down the hill and try it again. Your friends can hop on again at the top of the hill.'

"Pat refused to have his friends soil their feet by lining up beside the roadbed. It was no use to argue, so Jim did the next best thing he could think of. He trigged the wheels of the house-car, piled some of the wood into the front end, pulled the pin behind the tender and started for Coleville to set the tender off and so decrease his load.

"Pat made no remonstrance.

"'I'm captain of this car. Go to blazes with your old teakettle if you want to,' was all he said.

"Then Jim ran up over the hump, let her drift down into Coleville, and set off the tender after filling his boiler and replenishing his fire. Meantime some of Pat's friends thought it would be fun to coast back down the grade, so they kicked out the trigs and climbed aboard and the car started off down the hill.

"They began to go pretty fast near the foot and as there were no springs underneath the car it began to bounce round considerably. As their speed began to increase some of the men got a little scared as there was a curve at the foot of the grade.

"As the only doors were in the center of each end, they could not jump off in front without being run over, while if they tried to jump from the rear door they were going so fast, if any one attempted it, they would be liable to take a header, and the sleepers were not a good thing to bump against, so they clung to the car.

"They rounded the curve safely, ran over the half-mile of flat across the meadow and part way up Sand Hill before coming to a stop. Then they drifted back down Sand Hill and nearly across the flat before they came to a stop.

"The dividing line between sections four and five used to be at the stream midway of the flat. It so happened that the crews of each section were working near the culvert.

"Pat had begun to realize that Jim would probably get stuck in trying to haul the car up the grade with all of his friends, but he was so stuffy he was bound they should ride up the hill. When he saw the section crews he thought he saw a way out, so he interviewed the foremen and offered each crew five dollars if they'd put their

cars on the iron and pump up the hill behind the car. By that means he thought the extra power would get them over the hump

"Jim was some surprised to find the car was gone when he ran back over the hump; but as he'd have to back down over the hill to get 'em started it would save him from having to hold the car from running too fast by reversing his engine and working steam, so he did not care.

"When he coupled on he told Pat if they got stuck this time just because he had to haul all those extra men, he'd wait for No. 12 to come along and shove them over. That would mean a report to the super, and Pat would have to hunt up another job.

"'You didn't try to haul us over the other time,' Pat responded. 'You can do it if you want to and if you get stuck again I'll give you one good licking before I get discharged anyway.'

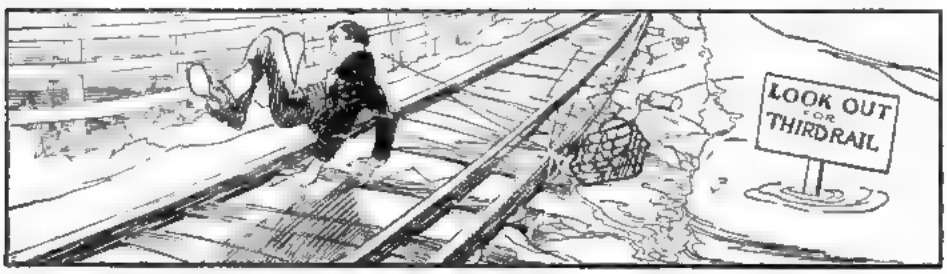
"Jim couldn't see the hand-cars lined up behind the house-car, as Pat purposely shut the rear door, and he was a little bit surprised at their starting so easy. But near the hump they began to go pretty slow and it looked as if they were going to get stuck one more.

"The men had been pumping for all they were worth and had begun to get winded, but Pat opened the rear door and yelled to them:

"'Hang to it, boys! You're most over and there's an extra dollar apiece if you get the car over the hill.' This put a little more gimp into them and although it was a case of nip and tuck, they managed to keep things moving and at last topped the grade. Part way down the hill into Coleville Jim had to reverse and work back steam, but even at that he couldn't hold 'em and they ran through the yard and past the north switch before Jim could do much of anything to stop them.

"Then he backed in to clear and was thankful he had got in, in plenty of time to clear No. 12. Pat's friends stayed until midnight and started to walk back to Waltham.

"The next day Pat offered Jim ten dollars not to report him. Jim told him to keep his money, but never to invite a crowd to ride any more with him, and that ended the matter. That was the only time Jim ever got stuck when running his old sawing-machine."



TOLD AT B E TOWER.

BY CHARLES L. FUNNELL.

IT was just at that part of the noon-hour (the signal electrician was saying) when you drop your perishable consignment carrier on the floor and begin to feel in your vest-pocket for that match that ought to be there by rights. We were all sitting in B E tower, which is at the east end of the single-track trestle across Fuller's Bay, on the newly electrified section of the B. and L.

All of a sudden there was a series of kiyis out on the right-of-way that would have passed for two and a half full fledged dog-fights on any stage on Broadway. One of

those woozy terriers of high society that wears his foliage so far over his eyes that you can't tell whether he has his nose on or not had just crawled under the third rail. The tip end of the underbrush on his tail had hit the live iron.

Mr. Canine started west across the trestle with everything open. Every third jump he'd hop a little higher and let out a yelp for luck. Bill Edwards was on duty in BE. He reached for the key and called BW, which was the tower at the west end of the trestle, a quarter of a mile away.

"Extra dog, going west," ticks Bill. "Past BE 12.28."

Pretty soon the line opens up and BW comes back.

"Extra dog still going west. Past BW 12.28¾."

"That's twenty miles an hour," says Bill. "That dog sure must have a date."

"Bet he keeps clear of the rail after this," remarks Pole-Pin Davidson of the line gang. "Experience is a regular teacher."

"You made a speech!" agreed Benny Rider.

Benny's a wireman in the substation department.

"When we were putting in that new rotary at No. 21 out on the meadows we saw a milk man get up against this experience thing. Five of us were out there and this cow-extract merchant had a route that took him across the tracks five hundred yards above our station. We used to buy milk for lunch every day, and he'd trot the ties with a wire basket full of bottles.

"Out there it's so lonesome they haven't ever put a protection board on the rail, and Mr. Milkman had a heap of respect for that piece of steel on the brown insulators. At least he did at first.

"We had a foolish habit of running along the rail when we were going up the track. It won't bite you, you know, if you hop on it with both feet and don't touch anything else while you are on it. It's only when you get between it and ground that it does things to you

"One morning that milkman saw a couple of us walking the third rail and it upset all his pet ideas about its danger. Next day when he came down with our milk we saw him eying that iron for a long time. Then he swung at it with his wire basket, just as a kid will make a pass at fresh paint with his fingers.

"You boys know that Crab Meadow Creek is fifteen feet from the right-of-way. That milkman just naturally aviated over into the drink without touching *terra firma* any place between rail and water. When he crawled out his wire basket was all disassembled. It melted every joint in the thing. Experience did a real job on that gentleman."

"Yes," said Master Mechanic Mahoney, who had strolled in from an inspection of the drawbridge in time to hear the last part of Benny's yarn, "it 'll do some great things."

"Between me and my kid and old John W. Experience there's one less booze-fighter out in my town. My boy is going to be a railroad man, of course. A couple of months ago the street railway in our town decided to junk some of the curiosities on wheels they'd been using to collect nickles with, and my boy begged me to buy him one of those ex-trolley cars to play with.

"I went around to see the super of the line about it, and first thing you know we had an old car in the back yard, bell, brake-handle and all. The kid painted up a wooden sign "Riverdale Avenue" for the front of it; and say! His mother doesn't ever have any more trouble keeping him home.

"Last Thursday was his birthday and I thought I'd kinda fix up an electric light in the old car for him, so he could play with it evenings. So Wednesday night after the boy was in bed I wired up the car and put a couple of lamps in her, with a nice snap switch on the back platform.

"Two or three of our fool hens had walked into the car and were roosting on the bell-cord, but I didn't disturb them any. Just as I was getting through I heard some rare cussing and then I saw Ed. Livingston coming into the yard.

"Ed is a fine fellow when he's sober, which is another way of saying that he's a good scout every once in a while. He lives

out of town about a mile and takes the Riverdale car. I saw him staring at the kid's car, and when I noticed that the Riverdale Avenue sign had caught his eye, I kept out of the way to see what would happen.

"He had a paper bag in his hand and was muttering to himself.

"'Sh'amn funny,' he says, 'usher shtart thish car at—hic—Main Shtreet,' and he walks in and sits down.

"He drowsed off for a couple of minutes, and then stood up, pretty unsteady.

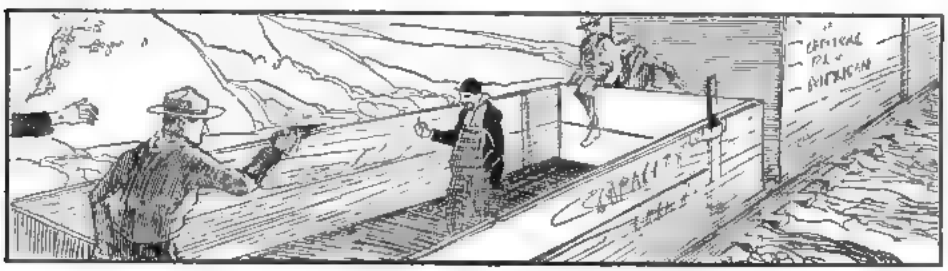
"'Ish_time—shtart shus car. Aw right. Shtart shus car m'shelf!'

"With that he reached for the bell-cord and dropped his bag. Twelve good eggs omeletted themselves all over the floor. Then he gave a heave on the bell-cord.

"My three hens fell off their perch all over him. He grabbed one of them by a wing. Still hanging on to her, he sat down to think it over, while she flopped and squawked very enthusiastic.

"'Rooshter,' he remarks, 'ish all wrong. When I bought — shou — shou wash a doshen eggs. Tishen't nashural. Gotta quishershtuff. 'S all!'

"And you know," finished Mahoney, "the old boy hasn't had a drink since! Old John W. Experience is some little instructor!"



THE BOES AND THE SMOKE-WAGON.

BY ADELBERT BARTLETT.

EQUIPPED with my rusty clearance from the B. B. and K. C. and loaded to the roof with hope (the braky began), I made schedule time in the direction of somebody's pay-roll.

Down-town I presented my little song and jig the best I knew how; but my audiences only hurled juicy lemons such as:

"Full up."

"Nothing doing."

"Big extra boards now."

I was 120 degrees in the shade of my blue collar and still going up when—

Ever meet after five years the fellow whom you regard as one of the best in all the world? Remember how your heart warmed, your eyes grew moisty, and you had a desire to lock horns with him affinity like?

Whom should I bump into but that wiry, fearless, laughing little Bobby Pearce—"Pretty Bob," the girls used to call him.

Five years before that in Seattle I had laid off a day to see him sail away on a battleship of Uncle Sam. Now he raved about the *señoritas* of Rio, the blue Bay of Naples, the boulevards of gay Paree. He had seen everything everywhere.

And here he came with a pass in his pocket going back to railroading.

"Short-handed at Troy, Montana," the Big G had told him.

I wanted to go too. Bob took me upstairs. There I told the T. M. of my sterling worth. He gave me a pass with Bob.

That night while deadheading east on No. 4, Bob outlined a recipe for making what he called "soft dough." We under-

took the scheme, too; but for my part it panned out in a Mexican stand-off; that is, I lost my money but saved my life.

"You and I will try to get a run together," so Bob plotted darkly. "Sure we can after a few weeks.

"While the con's checking up his bills in the crummy leaving terminals, me, working as hind man, goes over the train and fans the boes considerately, shaking 'em down for what indemnity I can levy without using bad manners, remembering those that pay and those that don't.

"Up in front I give you the latest news and go back to the crummy. Then you take a smoke-wagon and proceed back over that string of rattlers and make every stiff that's a piker hit the cinders—or kick in. You see we get 'em coming and going."

So saying, and seeing that I didn't at first enthuse very much over his nefarious plot, Bob slapped my back and let go an uproarious laugh that woke up everybody in the day coach.

"You little Pretty Bob!" I said. "Do you woo our swift expulsion from this great school of transportation?"

For answer he gave me another slap on the back and brayed like a jack-ass.

A month later, having bucked the Troy west slow board our allotted time, Bob and I did get a regular car, caboose 0114, with a con named Farrell, on Kootenai Cañon.

Supercargo was light during our first few round trips.

One day we had a sixty-car drag of empties mostly. To our joy these empties carried scads of *hombres*. The fall exodus from the Dakota wheatfields to the coast was in full swing.

On the straightaway leaving yard-limits I saw Bob coming over the train. In due time he found me digging in the diamond-fields. The proverbial thirty pieces of silver he split with me

"Business is good," he whispered. "But talk about your tough and hard-boiled owls! There's a capacity load of 'em in that Q. gon back there. When I say:

"'What you ridin' on?'

"They all say:

"'Go chase the oxen;' and 'kiss me kid.'

"They're pirates for fair!

"Now you tote your six-gun back there and clean house with those birds if they don't pay the freight. Give 'em to know this shack-army runs this train."

Bobby skidooed for the crummy.

Pretty soon I started back to collect our bills for undercharge.

The drag was among rock-cuts and sharp curves now. You couldn't see much of the train at any one time. After going about twenty-five cars toward Bob's "hard-boiled owls" I began to feel lonely and weak-kneed.

I dropped from a tall P. R. R. furniture to the floor of the Q. gon Bob had mentioned. I looked about me. Nobody in sight. Yet it didn't seem any too healthy there. I thought of my six-gun.

I hadn't any more than unlimbered the said artillery than somebody grabbed me from behind, took the gun away from me, and gave me a shove and swift kick that carried me clear to the gon's end. .

I turned and saw a short, fat, frowzy fellow standing amidships twirling my six-gun on the end of his thumb.

Heads popped into sight from the end-doors of the cars fore and aft. Husky rascals fairly swarmed down into the gon. I hung in one corner wondering how it could all be.

A big laugh crashed out, and those birds edged in close and bawled me out to a fare-ye-well:

"The dimpled darlin'!"

"Aw, the dear thing!"

"Percival!"

"Mammy's own spanked baby!"

The fat guy scowled and pointed my gun at me, with: "Youse oughta be shot so full o' holes you mother won't know youse. Youse two shacks figured to trim us, didn't youse?—only your pardner was nice about it.

"But youse is too fresh with that gat. 'Tain't necessary. Us boys is just peace-lovin' honest harvest-hands from Frisco. And our kicks is heavy with iron men."

Turning to the gang he said:

"Boys, frisk this lawless youth and annex his nice new overalls."

Then about nine of the toughest-looking customers ever assembled pitched on me

and pinned me down. They stripped me of everything I had except my union suit.

While I lay there shivering and wanting to cuss, the king of the boes slipped on my overalls over his ragged ones, and somebody put on my shirt and my jumper. My watch and chain, pocket-money, jack-knife, shoes and socks the gang divided up. Then they skipped. They must have unloaded there.

The drag kept on poking along round curves and through rock-cuts above the Kootenai and I, head brakeman, wore nothing but underwear! 'Twas maddening, to say the least.

Before I could decide whether I should go to the caboose or into the tall and uncut with my tale of wo, we were heading into Katka passing track where we had a meet. I hid behind the sideboard while No. 42 boomed past.

Then I started for the caboose. I knew I was a fine sight. Bob must have agreed with me, for he came ahead to meet me on the roofs.

"Attaboy!" he hailed me. "Oh, you flyin' Mercury! What's up?"

I didn't say a word, because I felt too humiliated to talk.

Upon reaching the caboose Farrell, the con, saw me and gave me the laugh right. Bob joined in and handed me a resounding smack on the back.

That was too much for me to bear. It put me in the mood to tangle with a wild Injun. I mixed it with Bob.

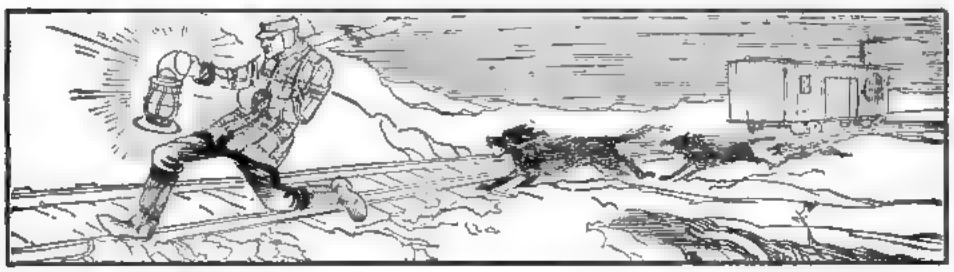
Bob and I fought all over the place. We knocked down the table; we mussed up the way-bills; we broke lanterns and a window before the con pried us apart. It was some busy little mill while it lasted.

But Mr. Farrell must have taken things more seriously than did Bob and I, for upon returning to Troy he somehow turned us in strongly to the main squeeze for "fighting while on duty."

I went farming then.

Pretty Bob enlisted in the navy again as a gun-pointer. He is on a destroyer "over there" now.

A good scout, that Bob; and you can bet on his seeing the U-boat first. And Bob certainly does like a rumpus any old time.



"O S—O'BRIEN—O S"

BY F. B. LOVETT.

BEING a victim of the wanderlust myself (said the itinerant brass-pounder), I feel privileged to comment on the temperamental characteristics of the boomer and to state that my conviction is that he was born to be "up against it." I will go further and state that he's not satisfied unless he is "up against it," and I'll prove this statement by a recent incident in my own checkered career.

Early last winter, in comfort and elegance, I'm installed in the Grand Central Station, New York, in easy walking distance of the Fifth Avenue parade and the "Great White Way." As far as the gaieties of life are concerned, I'm right in

the heart of the cabaret belt. And the job —easy? It was a sinecure.

Absorbing some of the fashionable notions of the neighborhood, I even had my nails manicured a few times and cultivated a sprightly line of small talk that seemed to impress the manicure queen at the barber-shop and the waitresses at the one-armed Delmonico's where I ate my ham and beans.

All the time I'm telling myself that I'm a real society rascal, a devil among the ladies and having a swell time. But somehow I become bored—*blasé*, as it were—amid all this mockery, bull and insincerity.

The "call of the wild" was knocking on the door, I guess, and the fetters of high society began to chafe. I wanted to get out where there was nothing but sky and earth and a chance to commune with Nature.

This frame of mind I developed is a temperamental malady chronic among boomer operators. When they're out hibernating in the Styx they'd go without sleep for two days and travel a hundred miles to see a two-bit show.

But set them down in the lap of comfort, recreation and luxury and right away they begin to pine for a box-car job on the prairie where the only sights they see are the rising and setting of the sun and the four quarters of the moon.

In my case, however, it's worse than most others, for remember it's winter when the "call of the wild" gets a half-Nelson on my system; but I go anyhow. I'm rather proud of the fact that I'm made of the sterner stuff that defies the frozen North, for this fit of temporary insanity points to Canada.

Nobody ever stops a man going in the wrong direction. On the contrary, the track is cleared and he's highballed ahead at every mile post. Relief stepped promptly into my shoes at the Grand Central Station and before I know it I'm closing up my romantic affairs with the broken-hearted fair sex and packing my dancing-pumps and Tuxedo.

I barely landed in Montreal when the C. P. R. catapulted me to North Bay, thence to Chapleau. When I arrived at the latter point the snow-plows were all running "extra west" and most of the other trains were tied up "somewhere on the line."

The depot and chief despatcher's office were entrenched behind mountainous snow-drifts, and if the train hadn't stopped at the platform they'd have had to call the wrecker to get me out of the snow. My wind is not as good as it used to be and my weight hovers around 210 when I'm batting out three squares a day.

"Howdy," greeted the chief in democratic Western fashion, as he gazed out over an accumulating snow-drift that nearly obscured the light from the window. "H-m—ah -we've had a storm."

"Thasso?" I queried.

"Yes," he assured me. "Rather unusual for this time of the year. We haven't had Indian summer yet."

"You'll probably get it about next July," I suggested flippantly.

"The immediate prospects are not bright," he admitted with some acerbity. "Are you ready to go to work?"

"Yes, sir," I replied.

But he knew I wasn't, and so did I when I saw that examination book of a thousand questions. I went into retirement for about a week and when I emerged, I had a soiled, dog eared, and much-erased application filled out and a million cuss words to my credit.

"We'll send you to O'Brien, Ontario," stated the chief, and I thought a telepathic titter flickered about the office, but wasn't sure.

I sat idly by and let my mind wander romantically as the chief waded through that disreputable document I had presented to him.

"O'Brien, Ontario!" The name was suggestive of the Emerald Isle and sprouting shamrocks. In fancy I could almost hear the joyous strains of the harp of Erin and the rippling waters of the Shannon River

Pictured in my mind a settlement of hardy Irish pioneers who whiled the long winter evenings away in dancing, mirth and jovial song. Romantically a vision of buxom feminine loveliness rose out of the

mirage and, with laughing lips and eyes of Irish blue, beckoned me on to O'Brien, Ontario.

I became so enamored of the ideas that filtered through my softening—or already softened—brain, that I was getting uneasy for fear the chief would change his mind and send me somewhere else.

"The living accommodations at O'Brien are a trifle—er—primitive," stated the chief cautiously, watching me out of the corner of his eye. "You'd better take some supplies with you and live in the office until you can look around."

I didn't come to earth even then, but the idea that I was going to a populous settlement slowly faded.

"You better take a couple of weeks' rations at least," he suggested, regarding my rotund capacity for pure-food products. "O'Brien is hardly accessible to the conveniences of a larger station."

After letting this sink in, he resumed:

"The office down there has not been open for some time. On account of a wreck, we have sent your night man to 'Z.' You will open the office and he will report at O'Brien when the wreck is cleared. You will find the office keys at the section-house.

"Here's your pass. You'd better take the morning local. O'Brien is—er—not yet a scheduled stop for through trains."

I smoked a lot of cigarettes that night, and through the vapory wreaths I tried to see O'Brien as I had first pictured it. But somehow the setting wouldn't hold together. The matter-of-fact discussion of O'Brien by the chief despatcher had dampened my ardor, and my imagination failed to produce again the chimeric atmosphere that had at first surrounded O'Brien, Ontario.

Taking stock of the commissary department before boarding the local next morning, I find a frying-pan, tin plates, cups, etc., supplemented by a peck of potatoes, one ham, coffee, sugar, condensed milk and a crate of biscuits. This junk is all wrapped separately and placed in a big grain-sack. To give delicacy to the bill-of-fare I'm toting two dozen fresh eggs in a paper bag and taking mighty good care of their transportation.

When the con punched my pass to O'Brien, he gives me the once-over, and there's a humorous twinkle in his off optic.

"Well, what's the joke?" I asked peevishly. "I know O'Brien isn't the capitol of Ontario. But it's a town, isn't it? How large might it be?"

The con's humorous expression developed into a broad grin as he turned to the braky:

"Bill, he wants to know how large O'Brien is. Tell him, will you Bill? Honest, I haven't the heart."

Bill leered at me as if he thought I were a specie of antediluvian fish.

"We told an operator that last week," he confided, "and he got off at White River. There's been a dozen sent down there in the last three months and they all did the same thing—got off at White River. O'Brien is some burg," and with an apoplectic fit of laughter he passed on, leaving the rest to my imagination.

I caressed my expensive supply of ham and eggs, meanwhile wondering what kind of a jackpot I'm drawing to. In this frame of mind the hours passed until the con finally took up my hat-check.

When the air was suddenly applied, I looked out the window for a bird's-eye view of my future camp. Rocks, hills and jack-pine, on one side; rocks, hills, and more jack-pine on the other.

"O'Brien," shouted the braky in my ear. "The town is back a couple of car-lengths opposite the day-coach."

I unloaded and saw all there was to see in a single slant. O'Brien, Ontario, was a box car, a conviction that had been slowly filtering through my noodle on the way down.

The suburbs were represented by another box car some distance down the track. Without straining my mental capacity I deduce that this is the section-house wherein reposed the keys of the city of O'Brien.

I set my supplies on the track and hiked for the keys. I'm hospitably welcomed by the section foreman's wife and invited to come in and thaw out. The thermometer stood forty below. That red-hot stove inside looked so good to me that I hugged it close until a piercing whistle announced the

approach of a train from the west. Automatically my hair stood on end as I recalled that my supplies were on the track, two hundred yards away.

I nearly tore off the section-house door as I made my exit. I loped down the track wildly waving my arms and trying to remember the necessary hand-signals to stop the destroying monster.

But in the sudden excitement I couldn't remember anything, and I'm still a hundred yards away when a streak of hen-fruit spatters the engine from pilot to headlight. They were still dragging the sack when the train passed and a potato flew out and nearly fractured my skull.

That dragging ham left a well-defined trail in the snow and I started out to get what was left if they ever dropped it. The trail was getting warm when four gaunt and half-famished timber-wolves emerged from the jack-pines and pounced upon something on the track.

Instinctively I knew it was my ham. Instinctively also I knew that one ham isn't enough for four hungry timber-wolves, and that when that dainty morsel had whetted their appetite, I'm next on the bill-of-fare.

I trekked for the section house *mucho pronto* as they say in the Philippines, and the way I kicked up the snow en route left a trail as if the snow flanger had been over the pike instead of a hurrying pedestrian.

"Wolves—lock the door," I shouted as I burst inside

"Nonsense; they never come up here," assured the section foreman's wife; "at least not until after dark."

"After dark!" I gasped. "Do they come up after dark?"

"Oh, yes; every night," she assured me brightly. "They look for scraps about the car. But we stay inside after nightfall. We don't mind them."

Visions of "19" orders at midnight flashed through my mind.

"But I may have to deliver orders at any time during the night. They'll eat me alive," I declared.

"Oh, no," she remarked with unfeeling composure. "The train scares them away for the moment and you can get inside before they return. Besides, you have a lantern. I'm not sure, but I don't believe they would attack you while you carried a light."

It seemed then I had one slim chance for my life—the lantern. I'm thankful for that and decide at once to invade my own private box car and if necessary fortify it against savage attack. Keeping a bright lookout for beasts of the forest, I made my way to what the chief had designated as the "office."

A rakish-looking stove occupied the center of the interior and the section foreman had thoughtfully placed a bucket of coal and some kindling close by. I had a roaring fire going in a few minutes.

I find a bunk well-supplied with blankets and then sweep out. There's a good supply of oil on hand and I cleaned up the lamps, lantern and put out the signal. When early darkness settles down I've got things cozy and comfortable.

"If I only had my ham and eggs," I sighed as the inner man persistently called for attention.

About the time I thought I was dying of starvation the hand-car stopped at the door and the section foreman invited me down to supper. I thought of the wolves and the return trip and nearly declined the invitation. About that time my empty stomach turned a flip-flop and I grabbed a lantern and climbed on.

I lingered over that delicious meal until the oil in my lantern nearly burned out. I ignored several obvious hints that the despatcher might want me for orders. I was thinking of the wolves. Only when I could no longer evade the issue, I took up my lantern and departed.

I never carried anything in the defensive line that gave me so little confidence as that lantern. I couldn't believe that a hungry timber-wolf would permit a tiny flicker of light to stand between him and a bountiful repast.

The distance was not great, but as I flashed the lantern about the hillsides seemed alive with skulking shadows. I accelerated my pace a trifle.

At the beginning of a mournful howl on the hillside, I accelerated it still more, and

when the dismal refrain was taken up from several different points of the compass, I broke into a gallop. I nearly ran over a snarling wolf that had been snooping around the "office" door and when I landed inside I was almost ready for the coroner.

Some time after, when I had recovered my composure, I replenished the fire, gave the despatcher "good night" and dived into the bunk.

As I lay there listening to the crackling frost outside, and the soft patter of slinking wolves about the car, I recalled the comforts of my steam-heated room in the city; the charming bright eyes of the manicure queen at the barber-shop, and the brilliant lights of little old New York's "Great White Way."

"Strange," I mused, "that a gink would fall for such a hoss-trade."

And then I fell asleep.

HOW WE ARE DOING "OUR BIT."

BY A. J. GILSON,

Master Car Repairer, Sacramento Division, Southern Pacific Company.

REALIZING one way of relieving car shortage is to lessen number of bad order cars on hand, my first consideration is directed toward repairing all right-repair cars, returning to service with minimum of delay. This means that cars must be promptly switched to and from repair tracks; satisfactory switching service is absolutely necessary to obtain maximum results.

To see that every car possible is maintained in service it is necessary to employ preventive measures; that is, not postpone repairs until actual failure occurs but apply the needed attention in the ever valuable present. A bolt in time will often save more than nine.

As each car comes to the repair tracks, the draft gear, trucks, brake hangers, and journal-boxes are given the very best of attention. This is imperative for expeditious movement. It is far more economical in time, labor and material to retain a car in shop a short while longer, if need be, than to have it fail in transit owing to not having received proper attention, resulting in delay not only to itself but every other car in train.

In order that loaded and manifest cars will receive prompt repairs, have established an "emergency repair track" advantageously located in train-yard. In most instances repairs can be effected in time for car to make regular connection.

BY L. D. MUMBY,

Clerk, Chicago, St. Paul, Minneapolis and Omaha Railway, St. Paul, Minnesota.

FOLLOWING the more or less monotonous routine of a clerk in a local freight-office of a large railway system, a man is apt to fall into the habit of discharging the tasks allotted him perfunctorily unless he is vigilant in avoiding the channels of least resistance. However, after all is said and done, the ultimate results are produced by him and his fellows in immediate touch with the traffic, who actually handle it.

One of my duties is to check out-bound way-bills. During these times many United States Government shipments are moving which must be expedited regardless of other freight and of all railway embargoes. Way bills must show that the shipments are entitled to such preferred handling.

I have been vigilant in checking billing of this character to see that proper information is shown clearly, permitting of no misunderstanding or delays.

I have to do largely with the shipping public at our station, and never miss an opportunity to impress upon them the necessity for loading all cars assigned them, to their full load limit, which I may add, is a fertile field for real effort.

THE BOOMER TURNS SWITCHMAN.

BY J. W. EARP.

He's Kept Busy Herding Engines and Playing Field; But Not Too Busy to Do Some Reminiscing.

YARDMASTER CARR looked up from his work as the door slammed shut with a bang behind the Boomer.

"Hello, Jones!" he greeted the newcomer with a grin. "Back again? How did you come out in the little session at the office? Sutherland was just in and he told me that the old man sure burned you. That right?"

"Is it? Say! Every time I opened my mouth in that office this P.M. the old skeezicks would slip me anywhere from five to twenty 'brownies.' When the jury passed the verdict out I'm in debt to the company fifty-five.

"The old man said he'd leave me five to go on, and if I wanted to draw checks regularly on this division this winter I'd sure have to hit the ball. But I didn't expect anything else up there. Somebody's got to be the goat, and it might as well be me! When am I getting out?"

"Right away," said Carr. "Haven't you seen the call-boy? He's looking for you."

"Naw, I haven't seen him. What's he want?"

"Going to send you to Marland to switch box-cars this beautiful night. How's that?"

"Well, I'll be hit with a torpedo! Don't I ever get anything decent around here?"

"Why, Jones, that is a good job up there."

"Now, don't try to pull any of that ten-twenty-thirt comedy on me! I'm hep to all the yards on this flea-bitten pike, and I unhesitatingly take off my hat to that yard at Marland as being one of the rottenest, dirtiest, meanest, most crabbed, crowded, rawhidingest yard on the rails.

"You haven't room enough in it to whip a cat, and it's a hot-foot job from start to finish. I know because I've worked there."

"Yes, I know you have," said Carr, "because Beal asked that either you or Browning be sent up."

"*Asked* for me?" repeated the Boomer in amazement.

"Yes," returned Carr, and threw a message over to Jones, who read:

> Send me a switchman at once to protect yard to-night. Jones or Browning preferred.
> BEAL.

Jones scratched his head in his perplexity. But he was too good a bluffer to let on that he didn't know Beal, so he said:

"Of course, Beal thinks he's doing me a good turn; but he's not. But you can't expect anything else when you get the name of being the classiest thing that ever cooned a car or gave a hoghead the sign to kick the stuffing out of the cracker-boxes. That's the way with the railroad game: get a reputation and you can't get away from it, no matter whether it's a good one or a bad one."

"There's something in that, too," admitted Carr. "There's a pass waiting for you at the office and No. 36 is on time; better beat it to the hash-house and feed. No; don't eat until you get your pass and some clothes. You may be down there for at least a week."

"Clothes!" snorted Jones. "Clothes! When you survey me as I stand you see all the wardrobe I own. That is one thing I'm not hampered with—is clothes. When I get ready to move all I have to do is to take and stick my extra handkerchief in my

pocket and be sure I've got my lodge receipt, and it's moving day for yours truly. What time does No. 36 leave?"

"Five-thirty. So you'd better hustle."

"Hustle is my middle name," responded Jones. "Somebody pill me right quick."

"What is your name, young man?" Beal asked of the Boomer, who stood leaning on the desk in the yardmaster's office at Marland.

"Jones."

"Can you switch?"

"Can I switch? Well, so I should remark for your especial benefit, I can. As a switchman I'm in a class by myself, and I don't bar any of those snake-eaters.

"But unless they're a pretty fast bunch of cinder-crunchers you'd better notify the doctor to be ready for an emergency call because Speed is my real name when it comes to chasing crummies, and I can't be looking out for the ginks that 've got lead in their feet."

"Never mind about the men here. They can hold their own anywhere. Go down to the switch-shanty and tell Mac I sent you."

At the switch-shanty the Boomer found two men sitting on the bench; and, finding out which one was the foreman, he imparted the information that he was "the new switchman."

"All right," said McQuarry, the foreman. "Brakeman?"

"Sure."

"Pretty familiar with the time of trains and all that?"

"Yep."

"Then you can herd the engines. When you're not herding engines you play the field. Get me?"

"First pop."

"It looks like rain," went on McQuarry as a low rumbling sound came to their ears. "Bring a raincoat?"

"Naw. I don't bar a little rainstorm, especially the kind they have out here. Why, I was switching in the Canal Zone once during the rainy season, where it rains twenty-four hours a day for six months at a stretch, and I never even thought of wearing a raincoat."

"Let's go," said Mac as the engine stopped in front of the shanty. "The first thing we'll do is to pull ten track and make up that extra for the East. Jones, when you hear two longs (whistles) and a short you drop everything and beat it to the roundhouse and pilot the engines where they want to go."

"O. K.," said Jones.

And the three of them mounted the footboard of the engine, Mac high-balled, and they went up to pull No. 10 track. As they went Mac instructed Jones in the private system of signals they used to call for certain tracks and the like.

"I got you," returned Jones when Mac had finished explaining. "Now, I'll show you how we used to railroad out in Frisco when I was working in the Bullring out there; and, believe me, that was some job. You had to be a switchman to hold your own out there. I've seen guys around here that called themselves switchmen that couldn't have worked in the Bullring if they had had red lanterns strung all over them."

"Humph!" was all the remark Mac made.

He looked at his switch-list, swung a washout and gave the signal to cut off four. The Boomer rode the cut in, left a binder on them and grabbed the next cut. But the next three cars got away from him and they registered against a string of cars at the other end with a loud crash.

"What the Samhill!" yelled Mac. "Didn't you catch the cut, Jones?"

"Nope. I missed her clean. Good thing there are lots of good binders on the cars down there. That ain't as bad as the time I was working on the E. and V. out of Brazos. I threw the wrong switch one night and sent a cut against the caboose track.

"Those three cars in the cut made kindling wood out of the crummies, and the way those stingers and O. R. C.'s came out of those hacks was like bees comes out of a hive. Some were well dressed and some of them looked like 'September Morn.' They were looking for blood, and as I didn't have any to spare I pulled my freight for the yard-office and quit."

"And unless you show a little more class

here you'll be looking for another job real soon!"

"Class?" said the amazed Boomer. "Let me tell you something, old sport: I've railroaded in places where you couldn't have seen the handholds for the flying cinders."

"It isn't what you used to be, it's what you are now that counts," said Mac, giving the signal for two more cars on eight. "Catch this cut; tie binders on both cars, too, before you leave them."

Just as the last binder had been set on the cars the whistle blew for the piloter of engines. Jones made his way to the roundhouse switch and, throwing the switch, gave a back-up sign which was promptly taken by the man in the cab. As the engine drew abreast of him Jones yelled:

"What do you want?"

"Coal, water, and turn on the wye,", said the hostler.

"We'll turn first," said Jones as he threw the switch and mounted into the cab.

As they started around to the wye Jones looked over on the left hand side of the cab and espied a negro sitting there on the fireman's seat-box

"What's the colored brother doing on the engine?" he asked. "Didn't know they allowed 'em to ride these battle-ships."

"They don't. But the regular man is sick and this is a new guy they took off another job. He's greener than a gourd and scared half to death about riding these engines."

"That so?" And Jones eyed the negro with interest.

A moment later he was on the seat beside the new boy.

"How is everything, old horse?"

"Pretty fair, boss. How's you-all?"

"Can't complain. Though I don't like the idea of riding these engines like this. It sure takes a brave man to be a railroader nowadays, with all these accidents and wrecks happening all the time.

"And an engine is the most dangerous place on the train to ride, because they're liable to blow up when you least expect it. I remember one time over on the E. T. and V. when a water-glass broke and put both the fireman's eyes out.

"Another time the lubricator-glass broke and threw hot oil all over the engineer. He was scalded so bad that in less than four hours after the accident happened he was dead."

The colored boy squirmed uneasily on the seat-box and cast a wary eye to see if the water-glass showed any signs of blowing up. Everything looked solid, so he got up nerve enough to get down and put in a fire. When he again seated himself on the seat the Boomer said.

"That's a mighty dangerous way you have of putting in a fire. You want to fire these engines light all the time. When you slug them, like you did just then, you create a backward suction that is liable to make her blow back on you some day. And, if she ever does do that, then—good night, nurse!

"I remember once when a case like that happened while I was braking over on the old Belt Line. He was a green fireman and he slugged the engine just like you did just now. She back-fired; and, would you believe me, the force of that explosion blew him clean through the coal-gates—and they were made of half-inch steel like that gate there!"

And the Boomer pointed with his finger at the coal gates.

"When we got to him we found him dead and he was flattened out as flat as a pancake that had got run over by a steam-roller.

"Another time I saw something like that happen, only it was a little different from the first since all it did was shave all the hair off the fireman's head with the fire-box door.

"It's dangerous work fooling around these engines, believe me! There isn't enough money to hire me to fire one of the doggone things!"

And the Boomer soberly shook his head.

As the Boomer finished the tale the negro rolled his eyes in terror and gazed fearfully at the fire-box door. The engine stopped at the switch on the right leg of the wye and the Boomer got off to throw the switch and start him back. When the Boomer once more planted himself on the seat-box he said. "I remember once when an engine blew up. Did you ever see an engine

blow up?" The negro hadn't, and Jones went on:

"I did once. It was awful, believe me! They never did know what became of the fireman, and the only thing they ever found of the engineer was a pair of pants hung on the telegraph wires. We buried the pants.

"That was the first time I ever attended the funeral of a pair of pants, though I have attended funerals of men killed in railroad accidents where all we had of the corpse was an arm or a leg to hold services over. The railroad game is sure a dangerous game."

The negro shivered and nodded his head violently.

"Sure is, boss!" he said earnestly. "I don't like to monkey around these engines, atall, atall. Mah regular job is wheelin' cinders. Yessah."

"That beats the railroad game all hollow. Do you have to take coal?"

"Yessah."

"Well, be careful when you pull those pockets down. I knew a fellow one time that slipped and fell just as he pulled the pocket down and he was buried under twenty ton of coal. He was dead when we found him. He smothered to death.

"Another time a fireman was taking water. It was in the winter-time and the end of the spout had frozen up, so when he turned the water on it couldn't run out the end of the spout, so it turned around and ran back. This constant whirling of the water in the spout made the spout jump up and turn around, and it threw the fireman half-way across the town. Oh, the railroad game is a dangerous game, all right."

"Sure is," said the negro, and jumped like one shot as a terrific peal of thunder echoed across the heavens and the rain came down in torrents.

When the engine was turned back into the roundhouse the Boomer made his way back to the yards where the switcher was working. The rain was getting worse and the water was beginning to run in swift little streams. Though the Boomer was soaked, he whistled under his breath as the damp clothes flapped against his skin.

"Guess I'll slip over to the shanty and dry out a little," he said to Mac.

"Have to wait a few minutes till we finish this pull," said Mac. "What do you care for a little rain like this?"

"A whole lot. I didn't hire out as a deep-sea diver or a sailor. I hired out as a switchman."

"And you switched in the Canal Zone, where—"

"Yeah," the Boomer interrupted, "but we didn't need rowboats where I worked"

The whistle of an engine at the roundhouse switch for Jones cut off any further argument. Still growling, the Boomer made his way to let it out for coal and water. Hardly had the fireman pulled the pocket down when there was a sound of an engine whistling out a flag.

From his seat the Boomer glanced up the track and saw a headlight at the farthest block. He grasped as he tumbled to the situation at a glance; he had blocked No. 31.

He was on his feet in a jiffy. Another jump took him through the gangway and sent him racing down the track for the spur switch. The hostler tumbled to the situation at a glance and yelled to the fireman to throw up the pocket. When he saw the pocket go upward and fasten with a click, he gave the engine steam and ran into the spur.

A moment later No. 31 called in the flag. When she went by Jones let the engine back on the main line to the coal chutes, to finish coaling. Just as he lined the switch back he heard a voice at his elbow saying:

"Are you the herder?"

"Sure I'm the herder. What do you think I'm doing, playing run-sheep-run?"

And Jones flashed the rays of his lantern into the face of—Trainmaster Allen!

"Have you a time-card?" asked Allen in an angry tone that had a snap in it.

"Sure, Mike."

"Have you a watch?"

The Boomer's hand traveled hastily to his watch-pocket. On finding he had a watch he answered

"Yep."

"Know how to use it?"

"Yeah."

"Then how in the Great Horn-Tailed Yak did you come to block No. 31?"

"Forgot there ever was such a train as No. 31," the Boomer answered simply.

"Now listen, Jones: We pay you to not forget. You should be one of these fellows that can't forget. Don't you know that?"

"Nope."

"Well, you ought to."

"Maybe I should. But I'm not like old Mike Humphrey that used to wave the tissues over on the L. and N. Old Mike wanted every one to know that he was the brains of the outfit.

"One night I'm braking behind for him and he wouldn't let me see the orders. But I get down and read them, anyway, and I see right away where he has overlooked his hand and I says:

"'Where you going for No. 432?'

"'What do you care?' he yells back.

"'A whole lot,' says I. 'We had a meet with them at that station we just passed.'

"'We did not,' says he.

"'We did,' I says.

"'Well,' says Mike, 'I'm the conductor, and I guess I know.'

"'Well,' says I, 'here is where yours truly gets off.'

"And I throw the side door open just as the hoghead on our train sees No. 432's headlight. He shoots the air to the baby and I unload just as they hit. The caboose buckles in the middle like a sick cat, then loops-the-loop over the first car and throws her trucks clear off the right-of-way.

"I tear up about fifty yards of gumbo ballast before I quit sliding, not to speak of the clothes I ruined and the hide I lost. So you see it doesn't pay to be a 'know-it-all.'

"Gimme a little of your refined cabbage so I can roll myself a dream. I'm about half-drowned."

"Well, I'll be—" muttered Allen to himself.

He didn't know whether to laugh or be angry. The glare of the engine's headlight fell upon the Boomer, and Allen's discerning eye saw that the Boomer's cap bore no badge.

"Where's your badge?" he asked.

"In my pocket."

"Fine place for it! Take it out and put it on. The only way we can tell the difference between a hobo and a brakeman is by the badge. For that I'm going to give you five 'brownies.'"

Without a word the Boomer handed his lantern to Allen.

"What's this for?" asked Allen, as he looked at the lantern the Boomer had forced into his hand.

"I've got no more use for it," returned Jones. "You see I've already got fifty-five of those things, and I can't stand any more."

"When did you get fifty-five?"

"Kangaroo court yesterday. Louck passed me all I could stand."

Allen passed the lantern back.

"I didn't know about that. I haven't been at my office for a week. I've been busy with that stock suit here. So I'll take off those five 'brownies.' But, for goodness' sake, be careful!"

And Allen turned and walked away, leaving Jones standing looking after him. When the engine finished taking coal she pulled by Jones on her way to the water-tank. Jones mounted into the cab and said to the negro fireman:

"You're in for it now."

"What for?" inquired the colored man.

"Causing that delay to No. 31. You want to be a little faster on getting that coal and water down where it belongs. Time is money on a railroad. Allen wanted to fire you, but I talked him out of it."

"Wish I had my old job back at hauling cinders," said the fireman mournfully.

The Boomer backed up against the boiler-head so as to try and dry out a little.

"This is a heck of a job!" he growled as the fireman crawled out to take water.

"About quit raining," said the hostler from across the cab.

"Thank goodness for small favors," returned Jones. "Because I can't stand to do this mermaid act much longer."

By the time Jones took his place in the field again it had quit raining. McQuarry, the foreman, eyed the Boomer thoughtfully.

"Think you can handle a switch-list, Jones?"

"Sure. Why?"

"I've got to run up to the office a minute."

"Go ahead. I'll handle everything all right. With this bunch here I could switch box-cars without lanterns.

"Why, when I was conductor on the Georgia Central we had colored brethren for brakemen. They could neither read nor write, but even so they switched box-cars in a way to make your heart glad.

"I used to make a chalk-mark on the cars that were to be set out at a station. But one awful bad, rainy day I ran out of chalk, and so what do I do but go down alongside the train, and every time I came to a car to be thrown out I'd slap a hunk of mud up against it. When I got back to where my two local brakemen were unloading merchandise I said:

"'Throw the muddy ones out and the rest back.'

"And when those boys got through there wasn't a mistake in the line-up."

"Pretty nice work," said Mac, on his return to the yard. "Thanks"

"You're entirely welcome," said Jones. "But that's nothing for an old-timer that used to be assistant to the classiest night yardmaster Pocatello ever had."

"So you've been to Pocatello, too?"

"Yeah. I went up there with a pal of mine by the name of Jimmy Patterson. Three weeks after we struck there Jimmy was promoted to the night yardmaster's job, and I was made his assistant.

"The snakes that blew in and out of there were the toughest bunch of nuts I ever saw. And the regulars were the most clannish outfit I ever met up with.

"We would have been there yet if it hadn't been that a switchman one night called Jimmy a pug-faced liar. Jimmy started in to clean up on this gent and teach him some manners. All the snakes present started in to take part in the mix-up when they saw Jimmy was getting the best of the argument. Then I took a hand in the game.

"I've been in better fights than that, but that was pretty good for that place. When the smoke cleared away there isn't anybody on their feet but me and Jimmy, and we are some wabbly. The yard didn't do any more work that night because we didn't have any able-bodied men.

"Well," said Beal the next morning to McQuarry, "how did the new switchman make it last night?"

"Just fine," retorted Mac.

"Where is he now?"

"At the beanery."

"Stop in as you go home and tell him I want to see him. Tom has reported for work, and I'm going to send Jones home on No. 35. Is he as good a switchman as the other Jones that used to come up here?"

"Better," said Mac, and grinned. "Only he's the biggest liar in the world."

When Jones returned from eating Beal said

"I'm going to send you home on No. 35. Mac tells me you are a pretty classy switchman. Where did you learn to switch?"

"Say, I was born switching box-cars!" boasted Jones. "And my experience extends from one end of this little old U. S. A. to the other.

"But the first regular job I ever had was for the Sante Fe at Argentine. I never will forget the first night I worked on the transfer engine that worked back and forth between Argentina and Kansas City. That night was just one long continual nightmare of washouts and kick signs and pull the-long-tracks. When daylight came my feet were blistered and I was all in. I says to the switchman I was working with:

"'This is sure some hot-foot job!'

"'Oh, not so bad!' says he.

"'Worst I ever struck,' I tells him.

"'Wait till you try the Sante Fe,' says he.

"'For the love of Moses!' I yells, 'what road is this I'm working on now?'

"'Mo. P.,' says he.

"And I almost dropped dead.

"You see, I'd got lost from my engine that night, and every time a foreman or a switchman would see my light they'd think I was one of their own men, and they'd yell for me to ride a cut.

"When I got back over with my own engine the foreman says to me:

"'Guess I'll have to hang a bell on you, young man, so I can keep track of you.

From the report I've just received I think you have worked for every road in K. C. since 6 P.M. last night except the Sante Fe.'

"Well, I see No. 35's smoke, so I guess I'll blow back to the boys."

"Come back again," said Beal.

The Boomer did not answer, but as he swung on the train he muttered:

"Come back again? That's the first time anybody on this pike ever invited me to come back and work with them or for them. Wonder if my boomer days are over?"

THE ALARM CLOCK.

BY PAUL STEELE.

YOU fat-faced foe of slumber,
You tin-can knell of fate,
Long years you had my number,
You pealed my hymn of hate.

My bureau-top adorning,
You've tanged your trick of wo
At the top of a winter morning,
With the mercury far below.

Or in blush of summer dawning,
With blest white isles in the sky,
And some near trout stream a yawning
For the cast of a line and fly—

Instead, your heartless yawling
Conspired my dreams to rob,
And set my spirits falling
As I hustled to the job.

So oft my fervent curses
Have hailed your matin song,
With sense of peace and mercies
Chased by your strident gong.

Yet now what change has gloried
The seeming of your face!—
My grim resentment storied
Is now a placid grace.

I leap to your appointing;
I love your slat and slam,
With oil your wheels anointing—
Ring on for Uncle Sam!

HURRY THE MILK-TRAIN THROUGH!

BY LYDIA M. DUNHAM O'NEIL.

UP in the mountains a bursting cloud,
A furious, mad downpour;
Down in the valleys a bridge washed out,
Where the raving rivers roar.
From the seats of the mighty a hurried call—
Never a moment to waste;
There is track to mend, there are wires to string,
And bridges to be replaced.
Then over the wires the message flies,
To trainmaster, caller, and crew:
"Annul the freight! The mails can wait!
But hurry the milk-train through!"

WHEN the snows lie deep on pass and plain,
Where gray clouds lower and lift,
And the trains are stalled the length of the line,
In many a dreary drift.
From the seats of the mighty a hurried call
To the rotary's crew goes forth:
"Full steam! Full speed! We must open the line!
We must battle the winds of the north!"
Then over the wires the message flies,
Where the whirling snowflakes flew:
"Annul the freight! The mails can wait!
But hurry the milk-train through!"

MILK for the babe of the millionaire!
Milk for the child of the slums!
Milk for the fevered patient there—
The call insistently comes.
Oh, it's right of way for the varnished cars,
Pullman, express, and silk,
When all goes well; but when all goes ill,
Then it's right of way for the milk!
From the seats of the mighty the word goes forth,
Till it reaches the farthest crew:
"Side-track the freight! The mails can wait!
But hurry the milk-train through!"

BIG RAILROADING—5.

SECOND SERIES.

PITTSBURGH AND LAKE ERIE, WORLD'S BIGGEST AND BEST LITTLE RAILROAD, IS MODEL OF OPERATING EFFICIENCY.

NEW YORK CENTRAL SUBSIDIARY, ONLY 73 MILES LONG, EARNS SOME TWENTY-FIVE MILLION A YEAR AND PAYS 30 PER CENT DIVIDENDS—OWNS MORE ROLLING-STOCK PER MILE THAN ANY OTHER LINE, AND ITS TRAINS HAUL OVER TWICE THE AVERAGE TONNAGE—SYSTEM THE CREATION OF THE UNDAUNTED COLONEL J. M. SCHOONMAKER.

BY CHARLES FREDERICK CARTER.

Author of "When Railroads Were New."

UNLESS, in some evil moment, you have kicked what appeared to be a bundle of rubbish out of your way, only to see the next man who came along pick it up and unroll a wad of yellowbacks big enough to choke an elephant, you are not qualified to understand or appreciate the anguish suffered by the Baltimore and Ohio and the Pennsylvania every time they see the Pittsburgh and Lake Erie Railroad.

Ah, This Line's the Candy!

And they cannot avoid seeing it unless they shut their eyes; for the Pittsburgh and Lake Erie winds and twists from side to side of the other two roads like the stripes on a stick of candy; only in this instance the Pittsburgh and Lake Erie is the candy, or the goods, or whatever your pet term to express admiration may be.

Even if the two big roads shut their eyes they cannot escape the corroding memories of a bet that was overlooked; for the exhaust of the Pittsburgh and Lake Erie locomotives, instead of droning a monotonous "one-two-three-four, one-two-three-four," like others of their kind, seem to taunt their neighbors with derisive snorts of "We-make-mon-ey; wish-you-had-it?"

Both the Baltimore and Ohio and the Pennsylvania had chances to gather in the Pittsburgh and Lake Erie at bargain-counter prices and both spurned the opportunity of their lives. Once the Pittsburgh and Lake Erie was offered to the Pennsylvania for $2,000,000; but the offer was declined. A few years later the net earnings, *net*, mind you, of the P. and L. E. were $9,000,000—four and a half times the entire proffered purchase price in a single year!

Salt has been rubbed in the lacerated feelings of the two big roads by the conduct of their hated rival, the New York Central, which took the little stranger in and has always treated it as a member of the family. The Pittsburgh and Lake Erie has requited this kindness by always

going straight home on Saturday and handing its pay envelope unopened to step-papa.

The Pittsburgh and Lake Erie paid a dividend the first year it was operated; and it has never missed a date with its stockholders since. In 1916 it paid only 30 per cent; but it has gone as high as 50 per cent.

Furthermore, in the natural course of evolution a traffic agreement was made with the Western Maryland which has blasted a way right through the Hindenburg lines of the Pennsylvania and the Baltimore and Ohio to Baltimore, and to one of the important coal-fields of West Virginia for the New York Central which, otherwise, might have had to be content with looking over the fence at the great and growing traffic of this territory.

The Pittsburgh and Lake Erie Railroad isn't much to look at on the map; for its main line reaches only from Pittsburgh 65 miles northwest to Youngstown, Ohio. The other end of the road extends 15 miles southeast of Pittsburgh to McKeesport, where it splits into two double-track branches, one of which follows the Monongahela River, 39 miles to Brownsville, the birthplace of James G. Blaine and Philander C. Knox, where it connects with the Monongahela Railroad, owned jointly by the P. and L. E. and the Pennsylvania, which gives access to the extensive Klondyke coal and coke fields.

The Youghiogheny Division follows up the stream of that name 40 miles from McKeesport to Connellsville, the place that made coke famous. A cut-off seven miles long connects the Monongahela and Youghiogheny divisions near their upper ends.

Mileage Is Little, But Oh My!

Altogether the company has but 75.38 miles of main line of its very own; but by counting in proprietary and leased lines and trackage rights these modest figures are swelled to 224.56 miles operated.

Compared with the thousands of miles stretching half-way across the continent, owned by some of the better known roads, the Pittsburgh and Lake Erie Railroad appears to be too trifling to talk about; but before running away with that idea deign to hear that this unconsidered trifle of railroad earned $24,043,162 in 1916, or an average of $107,067 per mile, which is so far ahead of the showing made by any of the big roads sprawling across a dozen States or so that it seems a shame to quote the figures.

Known as "the Little Giant."

But if you are to understand why the Pittsburgh and Lake Erie is the biggest little road and the littlest big road in the world, known among railroad men as "The Little Giant," it is necessary to have a show-down.

The Pennsylvania is a much older road, operating in the same territory which ranks second among American railroads in earning capacity. Yet the best the lines East, the most profitable part of the system, could do in 1916 was to earn $50,764 per mile.

The New York Central, which stands ninth in the list, averaged $35,382 per mile for the entire system in 1916, or less than a third of the Pittsburgh and Lake Erie's showing.

The Baltimore and Ohio, which also feeds at the same trough with the little road, trails along four numbers behind the New York Central.

The Union Pacific and Southern Pacific lead the Western lines, yet each mile of the Pittsburgh and Lake Erie earned as much as seven miles of the transcontinental lines.

The common, or garden variety of railroad feels proud when it can boost its earnings above $9,000 per mile.

As soon as your numbed faculties have recovered from the shock of these stunning statistics here is another dose for you:

The Pittsburgh and Lake Erie hauls the heaviest average revenue trainload of any railroad on earth, the 1916 average being 1,486 tons, which is more than double the average for other roads.

Its locomotives average greater tractive power than those of any other road.

It has the greatest number of locomotives per mile of road.

It has the greatest number of cars per mile of road.

All these things being true it is not surprising to find that it has the lowest operating ratio of any railroad in the world, the figures for 1916 being 48.98. When the average railroad succeeds in keeping expenses down to as little as 65 per cent of receipts it makes more fuss over its achievement than a pullet does over her first egg.

Yet the 1916 figures were high for the Pittsburgh and Lake Erie. For five months of 1909 its operating ratio went down to an average of 37.5; while in one month of this period it shrank to 33.67 per cent, a ratio no other railroad has ever attained.

When the president of the Lake Shore, which company was doing the big-brother act for the Pittsburgh and Lake Erie then, saw this report, he waved it in the face of Colonel J. M. Schoonmaker, vice-president of the little road, and exclaimed explosively and abruptly:

"That is a dad-blamed lie!"

Just like that! No factor of safety, no room for retreat, just the shorter and uglier word. Colonel Schoonmaker protested that he didn't write the report, and suggested that some of the Lake Shore's expert accountants be sent to Pittsburgh

A MOST IMPORTANT COG IN THE WHEEL THAT KEEPS THE "LITTLE GIANT" MOVING BRISKLY TO THE TUNE OF SOME $24,000,000 A YEAR IN EARNINGS IS ITS WIDE-AWAKE GENERAL MANAGER, J. B. YOHE.

to check up the auditor; and if they caught him in any funny business they'd make him prove it.

Accordingly a couple of the Lake Shore's best went through the books with X-rays and held the auditor up by the heels and shook him to see if he had anything up his sleeve.

Then the experts reported that said auditor was so upright he leaned over backward; that instead of doctoring the returns to make a favorable showing he had charged to operating expenses items that really should have been charged to something else; that, as a matter of fact, the operating ratio was less than 33.67.

Team-Work Did It.

Most interesting of all is the fact that these extraordinary results are not due to special interpositions of Providence, but to good, hard team-plays by the railroad crowd.

There were relatively few industries along the road at first, but the officers of the P. and L. E. rolled up their sleeves and went to work to create traffic.

Now the first fifteen miles running southeast from Pittsburgh to McKeesport is packed solid with vast industries, and all the rest of the two branches and the main line are peppered thick with them. If placed side by side the industries along and tributary to the Pittsburgh and Lake Erie to-day would make a continuous line forty-five miles long, or more than twenty per cent of the entire length of the road.

And a large part of them have been located by the direct efforts of officers of the railroad. One, for instance, is the immense steel-mills of Jones & Laughlin, at Woodlawn, nineteen miles northwest of Pittsburgh, which employ 18,000 men. The station that prior to 1908 yielded revenues of $25 a month, is now good for a quarter of a million dollars a month.

Immense as these industries are, they are growing rapidly. The steel-mills around Youngstown alone spent $27,000,000 in extensions in 1917. The Pittsburgh and Lake Erie hauls every pound of freight to and from many of these immense plants.

No wonder the big little road is strewn so thick with solid trains of steel products, of coal, of coke, of limestone, of iron ore; that of the 60,000,000 tons of iron ore going into the Pittsburgh district annually, this road hauls twenty per cent; that ninety-nine of every hundred cars moving north over its rails are loaded!

A 75-Year-Young Live-Wire.

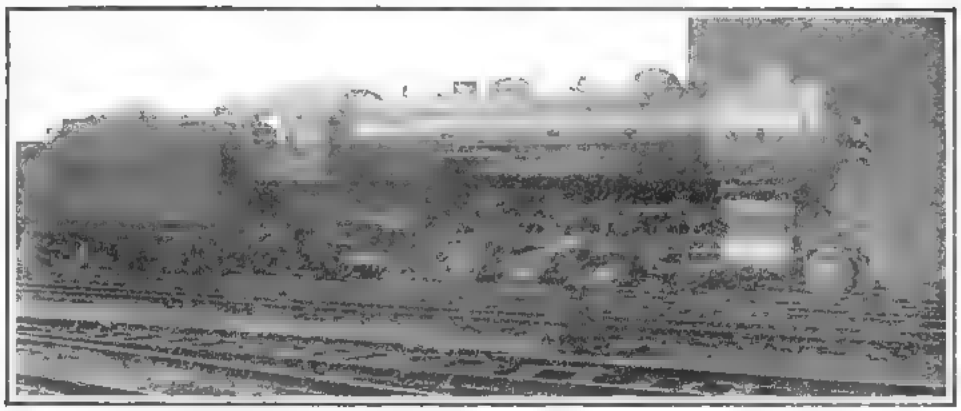
But let me tell you about Colonel Schoonmaker; for to understand the story it is necessary to begin at the first chapter of Genesis, which is the colonel.

Right away we bump into another record; for Colonel Schoonmaker, after taking the lead in organizing the road and raising the money to build it in 1879, has been on the job as vice-president ever since, the only instance in the annals of the railroad in which one man has been the works for a continuous period of thirty-eight years. And he's still right there at his desk every day, despite his 75 years, looking, talking, and acting younger than most men do at sixty.

Colonel Schoonmaker was the youngest colonel in the northern armies during the Civil War. He was a member of General Sheridan's party which made a tour of the Shenandoah Valley in 1864; and it was the winning ways of the youthful colonel and his regiment of cavalry which persuaded some Southern gentlemen to grant General Sheridan's party the freedom of the city of Winchester, a fact perpetuated in a report by Sheridan and in a painting in the great memorial building in Pittsburgh.

After the war the colonel engaged in the coke business in the famous Connellsville region, and in a short time found himself at the top of the heap, along with H. C. Frick. In fact, if you lived in the western part of Pennsylvania you would not need to be told about Colonel Schoonmaker, for he has been one of the foremost citizens of that part of the country more years than most of us have lived.

In 1879 the Pennsylvania Railroad dominated the transportation situation in western Pennsylvania, rendering a service that was entirely satisfactory to itself, although Colonel Schoonmaker thought, perhaps, there might be room for a little com-



THE BREADWINNERS OF THIS MARVELOUS LITTLE ROAD ARE MIKADOS WEIGHING 320,500 POUNDS, WITH CYLINDERS 27 BY 30 INCHES, AND DRIVERS 56 INCHES IN DIAMETER, DEVELOPING 61,400 POUNDS TRACTIVE POWER

petition. In these days, when coke is selling around $14 a ton, and unsold stock is locked up in safe-deposit vaults at night, such trifles as freight charges are not worth bothering about; but when the price hovered around a dollar a ton it was different.

Garrett Turned Him Down.

Being merely a coke man, Colonel Schoonmaker could think of no way to get relief except to go to Baltimore to try to persuade J. W. Garrett, the president of the Baltimore and Ohio, to bridge the Monongahela just above Pittsburgh and build a line along the south bank of that stream and the Ohio and thence over to a western outlet. But Garrett rebuked the presumptuous coke man for bothering him with such visionary schemes.

Colonel Schoonmaker thought that settled the matter; but by the time he had got back to Pittsburgh he had another think. There was a secret conference that evening at which the colonel and several

AT McKEES' ROCKS, PENNSYLVANIA, THEY HAVE A BLACKSMITH SHOP THAT IS PAINTED WHITE INSIDE, AND ALWAYS HAS THE APPEARANCE OF HAVING JUST BEEN CLEANED UP EXHAUST HOODS AND STACKS COVER EVERY FORGE AND FURNACE

other business men of Pittsburgh decided to build a railroad to a connection with the Lake Shore at Youngstown.

Capital was fixed at $4,000,000. Enough was subscribed to warrant a start; stakes enough to hold the right-of-way were driven Saturday afternoon and Sunday; and Monday morning application was filed for a charter.

Manufacturers were friendly, granting free right-of-way through mills that millions could not buy now. Still it was hard sledding, as it has been in the case of nearly every railroad enterprise that ever was launched.

The builders took on stock to float the road until they themselves were waterlogged. Colonel Schoonmaker had to unload shares of $50 par value at $30, which a year later were selling at $120.

Owing to its early financial difficulties, the new road found itself tied to the apron-strings of the Lake Shore during the first years of its existence, with no opportunity to distinguish itself.

Col. Schoonmaker Takes Active Charge.

Then a death in the Lake Shore management opened the door of opportunity. Colonel Schoonmaker — who considered himself merely a coke man, and who has never pretended to an intimate knowledge of the intricacies of railroad operation, although he did bring to his work the thorough training of a successful business man and organizer, and a firm determination to make a practical application of practicable ideas—found himself vice-president in fact as well as title—the executive head of the road.

He realized that the road was being operated at a disadvantage with considerably less than half the road laid with double track, which ended at single-track bridges, causing congestion, delay to traffic, and overtime for the train-crews, small cars and little engines, with a maximum capacity of fifteen hundred gross tons per train.

And the road was laid with 71-pound rails, while the culverts were unsuited for heavier rolling-stock.

He explained to the board of directors how necessary it was to place the road in condition to handle the traffic that was being offered on silver salvers, and rejected for lack of means to take care of it. The board adopted a resolution authorizing him to spend whatever he thought necessary to put the road in condition.

While this was all that was required, the colonel, as a matter of policy, decided to consult W. K. Vanderbilt. The talk ran something like this:

"I want to spend ten million dollars just as fast as I can spend it."

"How would it do to spend ten per cent of that amount annually for ten years?"

$10,000,000 Spent In One Chunk.

"That's the idea. We are ten years behind right now, so we need all the ten instalments at once."

"Well, your money is invested in the road the same as mine. If you can stand it, I guess I can. Go ahead."

This happened in 1896. Other things were happening about the same time. The Bessemer and Lake Erie was built soon after to handle all the immense ore and other lake traffic of the Carnegie interests.

A little later the Wabash spent $35,000,000 in failing to do what the Pittsburgh and Lake Erie did for $4,000,000 as a starter.

The incident of the ten millions is a clue which, if properly followed up, will reveal the secret of the remarkable success of the little big road.

This success is due to two things: horse sense and team-work. The New York Central, which holds a controlling interest, had the good sense to put a man in charge of the property who understood local conditions most thoroughly, and then let him alone. This principle has been handed down right through the whole Pittsburgh and Lake Erie organization.

The result is perfect team-work; for team-work consists in letting the other fellow do the things he is supposed to do. The boss or associate who knows every detail so much better than anybody else that he feels called upon to hold your hand while you drive a nail does not get very far.

ONCE EVERY YEAR THE VETERANS ASSOCIATION GETS TOGETHER FOR A BIG FEED, WHERE SECTION FOREMEN SIT WITH VICE-PRESIDENTS AND MANAGERS AND SWAP YARNS ABOUT "THE GOOD OLD DAYS."

Colonel Schoonmaker's first move with that ten million dollars was to buy bigger engines. He called in the superintendent of motive-power, L. H. Turner, and told him what he wanted.

Turner, by the way, enjoys the distinction of being one of the very few men who ever dared to sass Dan Willard, now the president of the Baltimore and Ohio, who as Chairman of the Committee on Transportation of the Council of National Defense, runs all the railroads in the country as well as his own.

Turner was roundhouse foreman at Air Line Junction on the Lake Shore, while Dan was a fireman. Dan's brand of firing did not suit the master mechanic, George W. Stevens, so he fired the fireman.

Dan wanted to go West to grow up with the country and Fred Underwood; but lacking wherewithal to pay fare or a pull with conductors running west, he rode a

TO BE ELECTED TO THIS ORGANIZATION YOU MUST HAVE BEEN AN EMPLOYEE OF THE PITTSBURGH AND LAKE ERIE FOR TWENTY YEARS AND IT IS A FINE TRIBUTE TO THE ROAD THAT THERE ARE 500 MEMBERS IN GOOD STANDING IN THE ASSOCIATION.

coal-car to the Windy City—at least, that's the way he told the story himself years later.

Turner saw nothing more of the fireman who was fired for twenty-one years. Then, one day, Dan—he was general manager of the Baltimore and Ohio then —walked into Turner's office in Pittsburgh and said:

"You used to sass me around at Air Line Junction. I came in to see if you were still at it."

There was no bloodshed.

It was in Turner's office that the first successful steel hopper car was designed in 1897 and built by the company. This car, which is still in service, has been the subject of more litigation than any other car ever constructed in this country, owing to its "built-in" body bolster which has been copied by all the steel-car manufacturers.

But to return to the new locomotives;

Turner designed a 70-ton consolidation engine with 90 per cent of the weight on the drivers, which was all the track and bridges would stand.

Engineer R. M. Long drew the first of the new engines, No. 121, and with it hauled a train of 2,400 tons gross, which was sixty per cent heavier than any train that had ever passed over the road.

Naturally the folks back home wired the good news to Colonel Schoonmaker, who happened to be in the New York offices of the New York Central that day; and he—well, this isn't official; but they do say that what the colonel did when he read that message would have been highly creditable to Vernon Castle.

New 'Gine Won the Pulling-Contest.

The Bessemer and Lake Erie was so impressed that it asked to borrow the No. 121 and the specifications on which it was built. The No. 121 and one of the B. and L. E.'s pet moguls, started from Lake Erie with trains of the same weight.

The mogul was given a helper up the Greenville hill, but stalled. The No. 121, which was following without a helper cut off, boosted the mogul and its helper over the hill, returned, started its own train on the grade unassisted, and took it over the hill alone.

Heavier engines called for heavier equipment; and heavier motive-power and equipment demanded more substantial track and bridges. So ever since there has been a perpetual struggle between the motive-power department and the chief engineer's office to keep a lap ahead of the other's requirements until the Pittsburgh and Lake Erie now has a four-track main line for two-thirds of the distance from Pittsburgh to Youngstown, laid with 100-pound steel rails with tie-plates on creosoted ties and rock ballast, and a bridge across the Ohio River 1,800 feet long that contains 16,000 tons of steel—an unusually heavy structure.

The maximum grade is 16 feet per mile; the maximum curvature 3 degrees.

As for motive power, the "bread-winners" are Mikados, weighing 320,500 pounds, with cylinders 27 by 30 inches, and drivers 56 inches in diameter, developing 61,400 pounds tractive power. These monsters frequently haul trains weighing 6,000 tons over the smooth and level tracks of the Pittsburgh and Lake Erie.

Cars, too, are expected to earn their keep. A favorite type is the so-called coke-cars, which are used to haul iron-ore south and coal and coke north.

They are of steel, 40 feet 2 inches long, and 9 feet 5 inches wide inside, and 10 feet 6 inches high from the top of the rail to the top of the body. The sides halfway up are of expanded metal.

These cars are loaded with iron-ore to the top of the steel body; with coal halfway up the expanded metal; and with coke all the way to the top, which makes a load of 82,000 pounds of coke.

A solid train of these cars, all rounding full of steel-gray coke, four-fifths of a mile long, makes an impressive spectacle.

Equipment Equals Length of Main Line.

When it comes to quantity of equipment, if all the cars and locomotives, including company equipment, were coupled into a continuous train, that train would equal in length the total length of the main line, 224 miles. This can be said of no other railroad on earth.

No wonder the Pittsburgh and Lake Erie has to have four main-line tracks in order to find room to make a move. Additional room is provided by 2.8 miles of siding for each mile of main line.

In every detail this prodigy of a railroad is out of the ordinary. The offices are in a seven-story building over the handsomest passenger station in Pittsburgh.

Upon entering one of these offices on a hot summer day the caller is impressed by the fact that the windows are all closed, and more especially by the fact that a man is clearly visible at a distance of ten feet, which, in Pittsburgh, is something worthy of remark. This is because the air-supply for the offices is filtered, washed, and cooled in summer or heated in winter.

On an upper floor is a dining-room where the heads of departments meet when they are not out on the road, to discuss company affairs while at luncheon. This

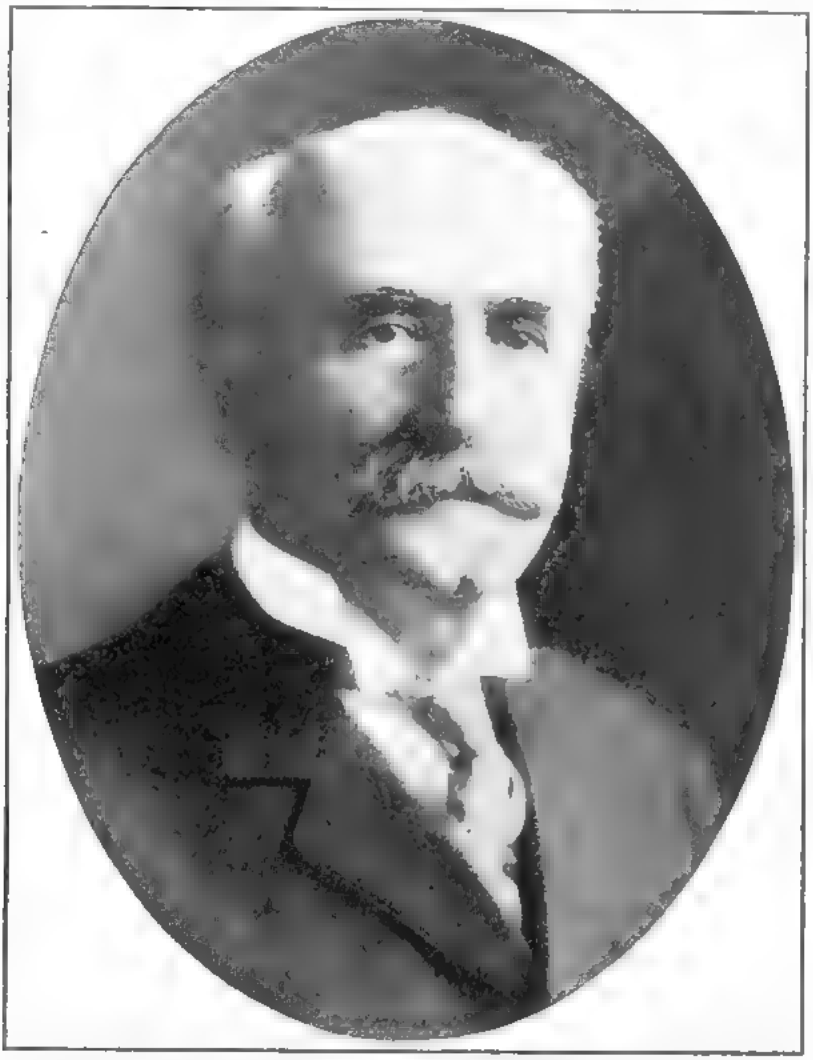
is one of the devices for promoting teamwork.

The net result of them all is that while there are many jobs, there is but one department, and that one is the Pittsburgh and Lake Erie: and but one idea entertained by heads of departments and the 10,300 employees, which is to keep the P. and L. E. at the top notch of efficiency.

They have a Veterans' Association with a membership of 500. To be eligible for membership the candidate must have been in the employ of the Pittsburgh and Lake Erie twenty years.

There is an annual dinner in November which every member is expected to attend. All members who began work for the company in a given year are seated at one table.

Colonel Schoonmaker, who belongs to the 1879 class, has a section foreman on his right hand and a crossing watchman on his left at these feasts, while General Manager Yohe, who is in the 1883 class,



COLONEL J M SCHOONMAKER IS THE MAN WHO ORGANIZED THE PITTSBURGH AND LAKE ERIE, RAISED THE MONEY TO BUILD IT, AND HAS BEEN VICE-PRESIDENT EVER SINCE TO-DAY, AT THE AGE OF 75, AFTER 38 YEARS OF CONTINUOUS SERVICE, HE IS STILL VERY MUCH ON THE JOB

has for table-mates conductors, flagmen, blacksmiths, and crossing watchmen. But then there are no distinctions of rank in the Veterans' Association.

In every detail of operation the Pittsburgh and Lake Erie is all that could be expected of the ideal railroad. I saw every mile of main line, every yard, every shop.

Everywhere was neatness and order. Why, the road from end to end looked as if it had just dolled up for the county fair.

The broken-stone ballast was sloped down from the ends of the ties at precisely the right angle; there were just so many inches of smooth ground between the toe of the ballast and the vegetation.

Nowhere was so much as a spike lying where it should not be. I did think I saw a lump of coal beside the east track just beyond the eighth telegraph pole north of Aliquippa; but I may have been mistaken.

Some roads that could be mentioned would do well to imitate the P. and L. E. style of passenger stations. The buildings are architecturally attractive, well painted, and clean, and are surrounded by well-kept lawns.

The car-repair yards look as if they had been sandpapered. A man could find nothing to fall over there, unless it was his own feet.

Many Labor-Saving Devices.

Wherever possible labor-saving appliances have been installed. At McKees' Rocks engine terminal, three and a half miles from Pittsburgh station, four men (two on a shift) at the ashpit handle 80 to 100 engines a day, where 20 men were formerly required.

Ashes are dumped into buckets which are hoisted by power and dumped automatically into a bin from which they run by gravity into cars. Front ends are self-cleaning.

At the coal-dock, two men, days, and one, nights, handle 10 to 12 cars of coal daily from car to tender, at a cost of less than 2 cents a ton.

Dirty engines are not in favor here. They are washed after each trip with an emulsion of crude oil and water and air at 100 pounds pressure, and dried with an air-blast, at a cost of 30 cents each as compared with the $1.80 that wiping used to cost.

Water in the Pittsburgh district is so surcharged with corroding acids and encrusting solids that it was formerly almost impossible to provide motive-power enough to keep trains running.

$1,000,000 to Wash Water.

An outlay of a million dollars provided water treatment installations everywhere so that there is no further trouble on that score.

But the soda ash used in the treatment would cause foaming if allowed to accumulate in the boilers. To avoid this difficulty the water in each boiler is changed every four days.

To blow out a boiler and refill with cold water would mean hours of delay, to say nothing of boiler-strains. So at each roundhouse there is a hot well, pumps, and other paraphernalia for saving hot water and steam, getting rid of the sludge in the process, and returning it to the next engine that comes along, fresh and clean and at high temperature.

An engine can come in, swap water, and be ready to leave again in forty-five minutes.

Firemen are changed almost as often as the water—that is, a certain percentage of them are—since the eight-hour law took a fall out of their pay. The older men on the better runs stay; but as for the rest, any able-bodied man between 21 and 28 years of age, who weighs not less than 160 pounds, and can read and write, can count on getting a job of firing nowadays, even though he never saw a locomotive before.

He makes two or three student trips with a selected fireman, is coached by a road foreman of engines, and then he gets a switch engine. Two out of three leave without waiting to see what they could do if they stuck to it.

Yet firing must have its attractions. William Hamilton served his time at it and was set up.

After making a couple of trips as engineer, he decided that running an engine was not what it was cracked up to be, so

AMONG OTHER THINGS, COLONEL SCHOONMAKER WAS THE YOUNGEST COLONEL IN THE NORTHERN ARMIES DURING THE CIVIL WAR, AND HIS BRILLIANT VICTORY AT THE BATTLE OF WINCHESTER HAS BEEN PERPETUATED BY THIS FINE PAINTING BY DE THULSTRUP WHICH HANGS IN THE GREAT MEMORIAL BUILDING IN PITTSBURGH. THE COLONEL IS SEEN MOUNTED ON THE WHITE HORSE, LEADING THE CHARGE.

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he asked to be set back to firing again. He was; and he has been at it twenty-two years, with no desire to change his condition. He is one of those rarest of mortals, a contented man.

They have their own way of setting up men on the P. and L. E., based on a shrewd knowledge of human nature. When a fireman is about due to get hisn, the road foreman of engines makes an excuse to brag on him right to his face, and throw out dark hints that he is going to be set up pretty soon, if said road foreman of engines has any drag at headquarters.

Promotion Based on Human Nature.

After that the road foreman watches that fireman as a hawk does a spring chicken. If he swells up and gets reckless, shows that he cannot stand prosperity—and it's remarkable how many men cannot—the incident is closed. On the other hand, if the prospect attends strictly to his knitting and tries to do better work, it will not be long before he gets his promotion.

In prowling around the shops at McKees' Rocks, the discovery was made that the big steel hopper cars have ball-bearing center plates, which is interesting chiefly as an indication of the policy of tireless endeavor to get all that is possible out of equipment.

This device was first tried out in May, 1901. Hugh McGuire, with a consolidation engine of 31,000 pounds tractive power, was given a train of fifty ball-bearing coke-cars, a dynamometer-car, and a number of leading motive-power men from all parts of the country as spectators, a total of 2,500 tons, and was told to see what he could do.

Ball-Bearings Lighten Loads.

What he did was to stop his ball-bearing train on Beaver Falls hill, start without help and tip over the hill at fifteen miles an hour. Next day he took 78 ball-bearing loads of miscellaneous freight over the road, repeating the stunt of stopping and starting on the hill and tipping over at fifteen per.

But speaking of being dolled up, you should see the blacksmith-shop at McKees' Rocks. That blacksmith-shop, sir, is actually painted white inside.

And one can see through the windows, too; for they are washed at frequent intervals with real water. More yet; the air in that blacksmith-shop is not so surcharged with smoke and dust and carbon monoxid and sulfurous acid that casual visitors regret having left their gas-masks at home. For there are exhaust hoods and stacks over every forge and furnace.

Still, the foreman is apologetic. He does the best he can, but one really cannot keep the house clean in that Pittsburgh atmosphere, you know.

And the blacksmiths? Well, you should see those men slam things around.

Their foreman was once a journeyman himself, and he knows to the fraction of a millimeter what constitutes a day's work; and he sits in a glass cage in the parlor—I mean in the shop—where he can see that they do it.

He never needs to say a word, for the men know that if they left that shop they never would get another such place to work—not in this world, at least.

White-Painted Smithy Sets Pace.

The white blacksmith-shop sets the pace for the whole road, for the management considers new shops and improved tools quite as essential as to have the best engines and cars.

An engine or a car in bad order is not earning money; so no defect is permitted to continue until it creates others and so multiplies the cost of maintenance. 'Ample shop facilities are provided at convenient points, and they are freely used, thus saving large sums annually.

Men, as well as engines and cars, need shopping at frequent intervals if they are to render first-class service. This job has been turned over to the Y. M. C. A., although the company pays the freight.

At every important terminal there is a railroad Y. M. C. A., which, like a good department-store, furnishes everything that a man away from home can want, from a meal or a bed to a clean pair of socks, entertainment, recreation, or help in fitting himself for a better job.

Ninety-five per cent of the men who run into Haselton, which is the Youngstown terminal, make use of the Y. M. C. A. there. The building and equipment represent an investment of $100,000, and an adjacent house has recently been purchased for $15,000 to provide additional room.

was attended by 220 men in 1916, and the teacher, a steel man from Pittsburgh, declares he never had a class that took more interest in its work.

Yet the old-timers can tell you of days when it was considered a dreadful thing to go to church. Now a substantial percent-

THE "LITTLE GIANT" IS NEVER TOO BUSY TO LOOK AFTER THE WELFARE OF HIS BOYS IN OFF-HOURS, AND HE IS STRONG FOR RECREATION CENTERS. NINETY-FIVE PER CENT OF THE MEN WHO RUN INTO HASELTON, OHIO, FOR INSTANCE, MAKE USE OF THIS Y. M. C. A. BUILDING.

The place is never closed. An average of 700 meals a day are furnished at an average cost of 35 cents.

There are 84 bedrooms always occupied, for they are used by 200 men a day, and sometimes there are ten or fifteen men sitting around waiting for a chance to get a bed.

There is the usual gymnasium equipment in constant service, and the usual educational work, including classes for firemen with a thousand-dollar outfit to help them pass their examinations, which are compulsory at the end of three years. If they pass they are set up as soon as an engine is ready for them.

Persons who hold that a Bible class composed of railroad men is an impossibility would receive a shock if they were to go to Haselton. The Bible class there

age of the train and engine men are active church members, the Methodists taking the lead, with the Presbyterians a good second.

In fact, the Pittsburgh and Lake Erie folk boast that their road leads in percentage of employees who are church members as it does in so many other things.

Church membership appears to exert a direct influence on operation. In days when it was considered the correct thing to gallop with the gang, the gallopers took no interest in the company's business and things did not move smoothly.

Now the caller knows before he starts out that he is sure to find his victims at home.

By the way, while very few men owned their homes in former days, a great many do now, while some also own other people's homes, automobiles, dividend-paying stocks

and other trimmings. Such men are not worrying about the size of the pension they will draw when they are weaned.

The Y. M. C. A. building at Dickerson's Run is superbly situated on a bluff overlooking the valley of the Youghiogheny. But for a novelty of real interest you should see the new rest building at Newell on the Monongahela division.

Rails Cook Their Own Slumgullion.

It has all the usual features except the restaurant; and that the management durst not provide. Having been brought up on slumgullion, which is the national dish of the Monongahela and Youghiogheny divisions, the men have acquired such an appetite for the dish that any arbitrary attempt to change their diet might easily lead to an insurrection.

So, instead of a restaurant with cooks and waiters, and a pretty cashier to tempt susceptible brakemen to eat to the point of indigestion in order to swell their checks and thus create an impression of limitless wealth, a kitchen has been provided where the men can cook their own slumgullion, just as they have been doing ever since they began railroading.

Slumgullion is also known as "Millionaire Stew," since the food speculators got busy, although it isn't a stew at all, but a fry. To prepare it you begin by heating a frying-pan sizzling hot, after which you heave in some chunks of ham.

As soon as the pan is nice and greasy from the fat on the ham, you dump in chunks of potatoes and onions, and last of all, some eggs; and mix the mess thoroughly.

The flavor is improved if you are careful not to wash all the valve-oil and coal-dust off your fingers before you begin, on the same principle that rubbing a clove of garlic on the edge of the saucepan adds an epicurean touch and a whoop in the ante to Italian dishes.

As soon as the onions are half done, remove the frying-pan to the nearest workbench, and then remove its contents directly from the frying-pan to the place where they will do the most good.

A jack-knife is *de rigueur* for this operation, although some affected young firemen try to put on a little dog by carrying a fork in the seat-box. On the other hand, if your confidence in the eggs should prove to have been misplaced— But let us change the subject.

Has Never Killed a Passenger.

One other record should be added to the Pittsburgh and Lake Erie collection. This road is the only one which can place its hand on the Book and affirm that in thirty-eight years of operation it has never killed a passenger.

What makes this record more impressive is the astounding volume of passenger traffic. In 1916 this big little road, with only 170 miles of its scanty mileage operated in passenger service, carried 5,150,169 passengers, which was 631,836 passengers carried one mile per mile of road.

Is this pretty good? Well—

As a basis of comparison it may be said that the corresponding figure for the New York Central, which leads all the trunk-lines in the volume of its passenger traffic, was 459,568.

HOW WE ARE DOING "OUR BIT."

BY W. B. EMBURY,

Master Mechanic, Rock Island Lines, Shawnee, Oklahoma.

I AM overhauling locomotives and cars as fast as possible, also promptly releasing loaded cars which come to us under load.

I am also saving all new material as much as possible and using all available second-hand material that is usable or that can be repaired and made usable. Am on the job regularly and see that those under me are doing likewise. This, however, does not require much effort, as we are all very patriotic at Shawnee.

FROGS—THE WORLD OVER.

India, Europe, and Australia All Come to Bat with Items New and Interesting to the Yankee Rail.

Darjeeling, the terminus of the Darjeeling-Himalayan, is seven thousand feet above sea level.

Ghoom, the highest point reached on the Darjeeling-Himalayan, is seven thousand four hundred and seven feet above sea-level.

The gage is two feet.

Granite chips are used for ballast.

0-4-0 saddle-tank locomotives are the only power used. They climb grades of one in twenty-five with ease.

Although the engines have a fifty-mile climb up stiff grades, they are not provided with sand-boxes. Two natives ride on the pilot and sprinkle sand on the rails. Labor is cheap in India.

From Ghoom to Siliguri, a distance of forty-seven miles, the smoke-boy has nothing to do but stick around and admire the scenery. Steam is used only when starting, and the entire distance is run with a closed throttle.

This piece of iron cost seventeen thousand five hundred dollars a mile to build and is one of the railroad wonders of the world.

Below Kuresong there is a remarkable engineering stunt. The mountain is too steep to allow of a continuous descent, so the track "reverses" several times and zigzags down the mountain, the engine alternately pulling and pushing the train.

At Choonbulty the track describes a double loop.

The locomotive is not equipped with a headlight. When running through the jungle at night a huge flare is lighted on top of the cab. It not only acts as a search-light, but helps to scare away the big game.

Paddington Station, London, the terminus of the Great Western, has the largest escalators—electric stairways—in the world. One can be made to travel either up or down during the rush hours.

Central Station, Newcastle-on-Tyne, England, has the largest crossing in the world.

Firemen head the wages list on the Tasmanian Government Railroads. One smoke draws $4.50 a day, and another $4.25. The highest-paid engineer receives $3.25 a day.

From 1909 to 1913 the French State Railways showed the enormous deficit of sixty-five million dollars for the five years' operation.

A new series of 4-6-0 engines turned out at the Crewe works of the London and North Western Railroad bear the following names: Nos. 95, Gallipoli; 126, Anzac; 233, Sulvao Bay; 1100, Lusitania; 1324, Falaba, and 2092, Arabic.

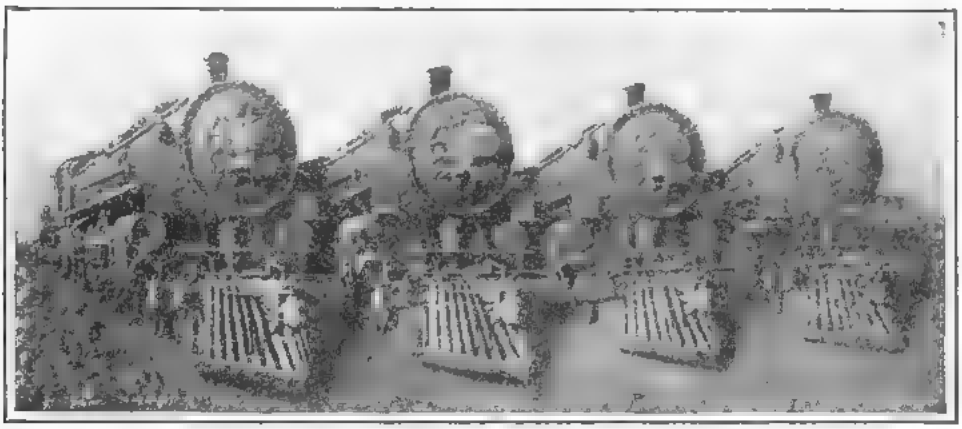
The Finland and Danish State Railroads have decided to use flash-lights on their distance semaphores, and have placed orders for a considerable number of installations.

Flash-light is rapidly finding favor on the Russian railroads. The Petrograd-Moscow line is shortly to be equipped with flash-light signals.

On September 16, 1997, the Great Western Railway of England made the longest "day" excursion trip on record—London to Killarney Lakes, Ireland. The distance for the round trip was 958 miles. The locomotive, a 4-4-0, made the run of 261½ miles to Fishguard Harbor without stop on both journeys. The return journey was made in 4 hours, 54½ minutes for the 261½ miles, the average speed being 53.2 miles per hour.

The longest run ever made without a stop is that of the London and North Western Railways, London to Carlisle, 299¼ miles. This record-breaking non-stop run has been made several times.

HAVE YOU AN ENGINE IN YOUR HOME?

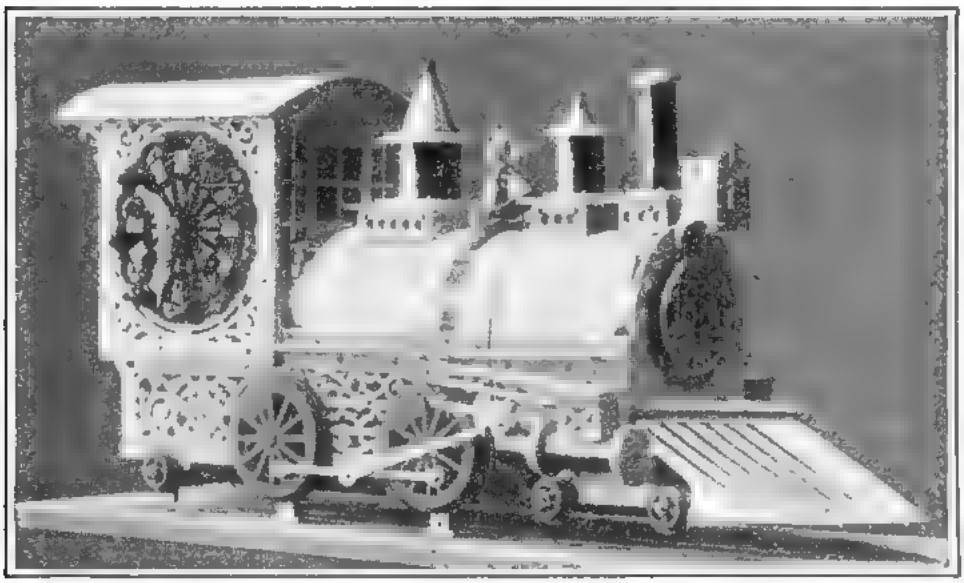


MODELS OF FOUR CHICAGO, MILWAUKEE, AND ST PAUL LOCOMOTIVES CONSTRUCTED OF ITALIAN CLAY

IF you are of a mechanical bent of mind and want some interesting work to while away your winter evenings, you might try building a locomotive of clay like those in the photograph above. Or if you are more ambitious, try your hand at erecting a real clock—one that works—in the shape of an engine, such as that depicted below.

The locomotives are models of engines used on the Chicago, Milwaukee and St. Paul road, and were made of a plasteline clay by Emory P. Seidel, a Chicago sculptor. They cost five hundred dollars, and represent three weeks' work on the part of the ingenious and patient artist.

The clock was constructed by a Kansas mechanic, and required nearly eight months to complete. A manual switch controls the wiring system in twelve combinations. The clock automatically turns the current on at 6 P.M. and off at 6 A.M. It strikes every half-hour by ringing the engine bell. At the same time the driving-wheels turn.



A LOCOMOTIVE-CLOCK 30 INCHES LONG WHICH WEIGHS 10 POUNDS AND TOOK EIGHT MONTHS TO BUILD.

WITH THE TRAVELING AUDITOR.

The Few Careless or Dishonest Agents Make Trouble Out of All Proportion to Their Numbers.

BY P. G. ESTEE.

IN order to make my territory, checking each station at least once every six months, and keeping up with transfers, accounts, promotions, vacations, resignations, and the like, I found it necessary to ride on almost everything, from the limited down to the work extras, gas-cars, and even hand-cars. Once I took a ride on a rail vehicle, sail-propelled. I may say here that the errand was a special one that time, and so was the ride.

Winter had set in early that year, and, although it was only November, our line had been blocked once, and wagon roads were still filled full, and country telephone lines down.

I had finished checking the X—— accounts at nine that evening, and retired at once, hoping to get a fair rest before No. 16 at four-thirty the next morning. I remember feeling glad that I was to have a comfortable train for a long jump the next morning, as it was growing cold fast.

A Life-and-Death Call from H——.

Well, I had just got nicely asleep about eleven o'clock, when the night operator came bouncing into my room at the hotel.

"Agent at H—— calling for you! Says it's life and death!" he announced.

Of course, I hurried into my clothes and ran across to the depot. I opened the circuit and called for H ——, recognizing the peculiar fist of the regular man there when he answered up.

"This is B——," I told him.

He started in at once and gave me a message in regular form. It read something like this:

B——

When you reach here, I will be beyond help or harm. Am five hundred short. See cash-book. My life-insurance will cover.

S

Wouldn't that startle you? A message coming out of the night, and in drawling Morse, that suggested that the man was already passing beyond our help!

I broke in quick and tried to brace him up—told him I would come at once and help him square it, advancing money personally if necessary. I could get no satisfaction, though, his only reply being to start the message over again.

In reply to my queries the despatcher informed me that there was nothing in the train line that would reach us for two hours. The operator had already tried the long-distance telephone without success. It looked as if the ten miles to H—— might as well have been a hundred.

The weather had not improved, flurries filled the air, and I knew it would be impossible to get an auto or a team through the drifts. As for a hand-car, by the time we gathered the crew and pumped ten miles, half the distance a stiff up-grade, there would be nothing gained over the time of the extra, which was then coming from the south.

By setting out all cars, he might cut the two hours a bit, too.

Mr. Estee's first article on the experiences of the traveling auditor appeared in the issue for December, 1917.

Suddenly the operator leaped to his feet.

"There's Ole and his sail-car!" he exclaimed. "Ole is foreman, and when they refused to give him a gas-car he rigged a big sail on his old hand-machine. The wind is right, and if there's not too much snow on the rails, you'll think you're flying."

While he was talking he had jumped into his coat and was hurrying out. He was back in no time to say that the foreman, who slept in his car-house, was getting ready.

I did not wait, but chased down the yard, and found a big, six-foot chap hoisting a regular sail with a short boom on one of the old-fashioned pump hand-cars.

"Das vind tak us to H—— to beat das band; yust hang on," he grunted, and we were off

Sailing by Rail.

I've ridden fast trains and fast autos; but for an uneven, uncertain, death-defying trip nothing ever approached that ride on Ole's sail-car. Snow had drifted on the rails somewhat, and fifty times we poised on the edge of nothing; but somehow the little car kept the rails. Sometimes, though, under the force of the wind, the sail up front would raise the rear wheels almost off the rails, and that added to the variety of the motion. Anyway, we made that ten miles in twenty-five minutes, grade and all.

"Brak in door?" asked Ole, when we slid to a stop in front of the office at H—— and found everything shrouded in gloomy darkness. "Das fallar sleeps in room back."

"Let's hope for the best," I said, and began a tattoo on the door.

There was no answer for a time, and Ole was just ready to put his big shoulder to the door, when a voice demanded who and why.

"It's B ——, old man," I told him. "I've come to help you out. Let me in"

A moment after, a figure clothed in an old blue night-gown and holding a lantern to the cautiously opened door, looked me over and grunted a welcome.

"Ban ghost," muttered Ole.

It was no ghost, but a very sleepy and disheveled station-agent.

"Always glad to see you, B——," he said, "but hanged if I knew I needed help this bad."

"What about your message to me? That talk of suicide?" I demanded. "Do you think we rode here for fun? What was the idea?"

"Message—suicide?" he gasped. "You're crazy, or else I am. Come in where it's warm, anyway."

Oh, Piffle!

As he led the way, he suddenly banged his free hand on the lantern and turned with a sheepish grin.

"I'll be darned if I don't believe I was up to tricks of my kid days—sleep-walking. Just before I turned in I was sitting in the office thinking of my work. I knew you were at X——, and I wondered how a fellow would feel if he were short, and knew you were coming to check things. I swear, though, I don't know a thing about touching a key to call you. Must have got out of bed and back without awakening myself. Mighty sorry, B——."

"By gol!" said Ole.

As for myself, I was too relieved to be angry.

"I came over to fix your books," I said, "and I am going to do that same. Dig them up, and while you get us one of those famous bachelor lunches of yours I'll go over the figures."

Of course, I made only a rough check of the current month, and found the remittances and cash correct to a cent. When I finished, we all sat down to a lunch that partially repaid us for that ride—coffee and hot cakes and honey. That agent was famous up and down the line for his cooking.

That was my only experience with a sleep-walker's stunts, but I have heard of people doing even more peculiar things than did the man at H ——.

Little Deliberate Dishonesty.

As I stated in a previous article, I found very few of our men guilty of deliberately planned dishonesty. Carelessness caused me much labor, and drunkenness gave me some knotted accounts to untangle; but I am happy to state that during the later

years of my work men who drank were hard to find.

Indeed, I do not believe there were three on my whole territory; even moderate drinkers. The same thing was true through all branches of the service—the personnel steadily improving with the years.

Following the tracks of an intoxicated hen is nothing as bad as untangling the threads of a set of books upon which a man has worked when drink has befuddled his senses. You may have an idea where the hen wished to go; you haven't the slightest clue to the wanderings of the man's mind.

I have already detailed some few of the cases of trickery I found. Another case came up the following year, where the evidence showed such cold-blooded planning, that I had little compunction in seeing the guilty ones receive punishment.

Among my accomplishments during early years of railroading was the ability to follow beside a string of cars and remember the numbers and initials without resorting to pad and pencil. Sometimes, as I rode up and down the line after my promotion, I amused myself by keeping in practise, catching the figures and names on the cars which filled the sidings.

Where Memory Helped.

It was in October, I think, that No. 2, on which I was riding, slowed up at D——, and I involuntarily noted the numbers and names of the string of cars on the team-track. I particularly noted two Western cars from which lumber was being unloaded.

It was perhaps a month later that my regular round brought me to D——, and I was welcomed by the young agent, a rather flashy chap, who had come to us from another road. My unfavorable opinion of his personality was somewhat dissipated when I found accounts and cash in fine shape.

I had practically finished my work when I happened to remember those cars of lumber, and idly wondered why I had failed to notice the amounts in looking over the previous month's abstracts. Coast lumber to my territory running to several hundred dollars per car, made their items stand out, you know.

I hadn't a thought of being suspicious, but it was my business to be sure of everything. So I looked carefully through the accounts for the month when I had noted those cars.

I checked right up to the date of my visit. Those particular cars were not on freight received or abstracts. Quietly I secured the car-record book and looked through that. The cars showed there, but the record made them merchandise in and empties out.

O. K. for the Young Fellow.

Well, I gave the young fellow an O. K. and complimented him on his accounts, and went my way saying nothing. Either the thing was a clear case of carelessness on his part, to which our auditing department had contributed by failure to charge the cars on a special sheet when they did not show in the proper month, or else there was a well-developed scheme to defraud, involving more than our young agent.

I ran into division headquarters that night, for I wanted quick action on my telegrams. An inquiry to the auditing department showed that the Western road had never made a report of the charges or claim for its proportion of earnings. The car department of our road had, however, credited the *per diem* earnings of the cars.

I took the matter up next with the headquarters of the lumber company, and found that their representative at D—— had turned in proper freight bills for full amount of charges. The originating station I found to be a little place in westen Washington. I laid the facts before my chief, and he came back with a wire to hurry West and get in touch with a man from the Western headquarters.

Confederate "Lost" Cars.

We certainly uncovered a nice little get-rich-quick plot. The Washington station billed hardly anything but lumber, and a few cars could be "lost" each month without arousing suspicion. The agent there would get in touch with some Eastern man who wanted to make a few hundred, or else some pal would come back and get on our relief list.

Then, when a shipment reached the particular station, all record of the way-bill was destroyed. The confederate allowed the car record to show, changing its load to merchandise or anything that would divert suspicion, after it had reached the East. The *per diem* and freight being handled separately, made possible their success.

It happened that our friend in D—— was the only man involved on my territory; but we found evidence enough to prove the guilt of other men on the system and on other roads also.

A different case was that of the young cashier at Q——. I dropped in there one afternoon, and the instant after introducing myself I saw that something was wrong.

The young fellow, who was a stranger to me, did not attempt to cover his guilt; he just admitted that he had got into a gambling-joint and gone plumb light-headed. He had a part of the company's money with him, according to rules, and when he came to his sober senses he was outside and the money-sack was about empty.

His shortage amounted to about four hundred dollars. It was apparently my plain duty to have him arrested and held for the bond company's man. This case looked different to me, however.

I got him to talking and learned that he had never transgressed before beyond the inevitable small-stake game in his or some other young fellow's room. He did not defend his conduct or ask for mercy. The only thing he begged for was a chance to go to prison under another name, so that his folks would not know but what he was still working.

Fixing It with the Gambler.

I put him on honor not to run away or do anything foolish, and started in to investigate his story. He had been telling me the straight stuff all through.

I found that most of the citizens, outside of the whisky element, were opposed to the joint in which he had gambled away the money. The one daily paper refused to help me; was afraid, I guess; but I decided to see what a bluff would do when backed by a ten-thousand-mile railroad system.

I called on the proprietor of the gambling-house, and in plain language told him what I had found, and added that the boy would be arrested unless the money was produced. The fellow appeared only mildly interested and asked if the cashier was not of age. Of course he was.

Then I produced a copy of a little handbill I had persuaded a job-office to run off for me. It was the story of the young cashier, with a little of the sob stuff added. Underneath were the details of his arrest.

Big Type Scared Him.

The big type was all devoted to the name of the gambling-house and its proprietor. Q—— was a terminal for a branch, and among its inhabitants were numbered a good many railroad men from every department of work. Not many were customers of the place, but they were not active enemies.

No one could doubt what their attitude would be if the cashier was imprisoned under the circumstances set forth on the bill, for I had found what looked like a frame-up in the manner the money had been lost. Of course, we could have proved nothing.

The fellow bristled and blustered, but I stood on my bluff to peddle a bill to every man in that city before seven o'clock if the money was not returned. He gave in at last. The boy held his job, and to-day is an official on that very division.

A good bluff is sometimes as good as a good case, and when a good bluff is backed by a good cause it is bound to get over.

I found lots of opportunity for character study in the men with whom I came in contact at the stations in my territory. I have heard of auditors having keys flung at them by agents whom they had criticised, justly or unjustly, and of their being left to handle stations until new men could be sent to their relief.

For my part, I never had any of those things happen, for as I studied an agent's books I studied his character. In fact, the books were generally an index to the character of the man who kept them. To get better or more careful work, some men had to be jollied or argued with; others had to be bullied a bit.

CIRCUS RED'S LUCKY RABBIT-FOOT.

BY WILLIAM H. SEYMOUR.

He Learns That "There's Only One Superstition: It's Unlucky to Be Electrocuted on a Friday."

E was showin' in one of them tank-towns in Florida. I fergets th' name of th' dump jest now, but it was sure some punk burg. Nothin' but sand an' sun an' wind. I remembers th' wind because it blows a newspaper inta th' juice joint, an' seein' that me an' Red ain't gettin' no lame arm from peddlin' out th' juice, him an' me splits th' rap-sheet in two pieces an' starts ta give it th' once over.

Th' sheet is a coupla weeks old. I draws th' part with th' "Society Notes" in it. I reads how Gabe So-an'-So is "enjoyin' a vacation on account of bein' laid up with th' mumps" an' I gets wised up that Miss Sally Somebody is entertainin' her friends with selections on a talkin'-machine what she got fer savin' soap-wrappers an' tobacco tags.

Red draws th' advertisin' section. Pretty soon he's readin' ta me about a jane in California that's advertisin' fer a husband

"She's got fifty thousan' iron men, Slim," he tells me. "She's forty years old an' weighs two-twenty."

"I ain't interested, Red," I tells him. "I'd rather have two small ones; twenty years old; one hundred an' ten pounds apiece with twenty-five thousand bucks each. See anythin' like that?"

"Can th' funny stuff," Red tells me; "they ain't nothin' like that."

I glims over some more of th' yap society notes, an' then Red nannies in again with another ad that interests him.

"Whad da ya think of this one, Slim?" Red asts me. "Here's a guy in Philly that peddles a rabbit's foot fer a caser. It brings ya all kinds of luck; if it don't, he'll mitt ya dough back again."

"Better keep th' caser in yer jeans," I says. "I don't fall fer this lucky stuff a tall. I only has one superstition an' that is I think it's bad luck ta be 'lectrocuted on a Friday."

"But they is guys that is lucky," Red tells me. "Lookit th' Dog-Face Man fer inkstans; why, if that guy fell in a sewer he'd come up with a bank-roll in each mitt an' a gold-fish in his mouth."

"Red," I says, "Dog-Face has a right ta be lucky; he ought ta have somethin' ta make up fer that face he has ta wear. I wouldn't want a mush like that wished on me fer a lifetime pass ta th' Polo Grounds an' th' first mor'gage on a brew'ry thrown in fer good measure."

"But Dog-Face totes a lucky charm; he showed it ta me," Red tells me. "Him an' me was in a scoff joint. We orders an oyster stew. Dog-Face gets seven oysters; I get none.

"Besides gettin' th' oysters he comes near bustin' his teeth on a coupla pearls. I asts him how he did it, an' he flashes a lucky stone on me. An' lookit what happens last Sunday when we was in a dry town an' spittin' cotton fer a hod of th' foamy stuff."

I has ta admit Dog-Face was lucky that time. They was five of us in th' push. We're scourin' th' town fer somethin' that's cool an' wet. We splits out an' hunts in different directions.

In about five minutes Dog-Face wafts back with five bottles of th' amber brew. He tells us that he was crossin' th' road when a guy on a motor-cycle comes tearin' along. Jest as th' guy passes Dog-Face, a

bundle that's tied ta th' back of th' motor busts an' strews five bottles along th' sandy road. Th' guy on th' cycle ain't hep, an' Dog Face gloms in th' precious fluid. Not a bottle busted an' jest off th' ice. Some luck! What?

"Slim," Red says ta me, "I'm goin' ta send a case-note after this lucky charm. It might bring me luck; some jane with a barrel of dough might get stuck on me; or some one might force th' nomination fer President on me; or maybe sometime when I'm thirsty a guy in a air-ship might drop a keg of beer in front of me. Ya can never tell what 'll happen when yere lucky, Slim, ya never can."

"You said it, Red," I tells him. "I knows a guy in New York that was hit by an ambulance goin' fifty miles an hour; it knocks him clean through an undertaker's window. Th' doctor in th' ambulance says my friend is croaked an' th' undertaker gets busy an' puts th' guy ta bed with a shovel.

"Now, if my friend was carrying a lucky stone he might 've been hit by a comet an' they wouldn't be anythin' left of him fer his friends ta put flowers on when Decoration Day comes round: or he might of died of some lingerin' death like old age. Yep, it's great ta be lucky, Red."

Red has a tin ear fer my kiddin' an' shoots his tough case-note through th' mail fer th' lucky charm. He waits a coupla weeks an' he don't get no action fer his coin.

Then he writes an' bawls th' guy out fer not sendin' th' goods. Th' guy that peddles th' lucky stuff comes back as strong as horse radish an' tells Red that th' dough never reached him.

"That's a bum openin' fer a lucky charm, Red," I says. "Better lean away from that yen."

But Red is stubborn like an army mule an' sends another caser after th' rabbit's hoof. It ain't long after before th' circus mail-man plants a package beside Red's plate in th' cook-house.

I glims th' wrapper over an' I'm wise that th' charm is with us. Later in th' day Red leaves me take a slant at it.

"It's a fine-lookin' piece of cheese," I tells him. "Looks like th' rabbit had th' mange."

"I should worry about what he had," says Red, "so long as I'm lucky. If th' charm fails I can get my dough back."

Red should ought ta have chased th' charm back an' ast fer his dough that very same night. Here's how it comes off:

Red is in front of th' joint jest before th' night show closes. They is a coupla swell-lookin' village queens handin' him some kiddin' chatter. Red, th' poor goof, thinks he's makin' a big hit with them. He's feedin' them candy, popcorn, an' juice, an' tellin' them what Broadway looks like after 1 A.M.

Now they is a coupla elephants that is parked right next ta th' juice-joint. These two bulls was waitin' ta give th' wagons a lift because th' lot was kinda swampy.

One of th' bulls pokes his snout under th' side-wall of th' joint, lookin' fer peanuts. Red don't get hep; he's very busy datin' up th' village queens ta walk home with them after th' show.

Th' bull runs his snout inta a tank of juice that's standin' on th' ground down behind th' counter; he's thirsty an' takes a long pull. Then th' bull decides that he don't like th' stuff; he lifts th' side-wall an' starts ta blow. Red ketches th' stream in his ear an' he stands like a dummy an' takes it all.

I blows along jest then an' I dopes out what has come off. I gives Red th' happy laff an' th' village queens cut loose with me.

He has it framed ta stroll home with th' janes, but his clothes is on th' blink. I comes ta th' front, joins out th' queens an' wafts home with them.

I don't see Red again until th' next mornin'. He's sore like a boil an' he raves ta me like I had it fixed with th' elephant ta pull th' stunt.

"Red," I says, "take it from me, tie th' tinware ta th' lucky charm; it's workin' with reverse English."

"I wasn't wearin' it last night," Red tells me; "but after this I'm a goin' ta anchor that rabbit's hoof right on my watch-chain."

When Red makes a crack like that I always looks at his ears ta see if they're

regular human lugs or whether they're long an' hairy like them on a jass-ax.

Th' next night is our last show in that burg. Th' two village queens lines up in front of th' juice-joint jest before closin'-time. They kid with Red about his shower-bath w'ile I feeds them about ninety cents' worth of candy an' drinks.

After that me an' Red closes th' joint an' hikes down th' main stem with th' janes. It takes us about an hour ta say good-by. After we has promised ta write every day ta th' queens, Red an' me makes our escape an' hits th' trail fer th' circus-train.

We finds that th' train has pulled out without us an' that th' best we can do is ta grab a freight that pulls through th' burg at daylight.

In this yap burg they sloughs th' street-lights at midnight an' they puts th' cover on th' hick hotel when th' last train crawls in at eleven. It's about one o'clock when me an' Red camps out on th' platform at th' railroad station. It's so dark that me an' him has ta strike matches ta see where we're goin'.

"Better go easy on th' matches, Red," I says. "It's about a coupla hours till day-light an' I ain't got no more."

"That's my last one, too," th' big simp tells me.

Can ya pitcher th' pair of us in th' dark? We're croakin' fer a smoke an' blastin' each other fer usin' all th' matches. Besides that we're dyin' of thirst. I'm sittin' on somethin' that feels like a box of soap; Red says he's perched on a keg of nails.

After a w'ile we gets sleepy an' we lays off of bawlin' out each other. Next thing I knows is that it's daylight an' th' freight is whistlin' down th' track. I gives Red a shake that knocks him off th' keg of nails.

Whaddaya s'pose his nail-keg was? Nothin' else but a full keg of cider!

Before we makes a dash fer th' rattler, I stops jest long enough ta make sure that my blame fool pardner was roostin' on a barrel of precious bev'ridge all night long when me an' him was willing ta bust all th' ten commandments fer somethin' wet.

Boy, oh, boy! Ya should ought ta have heard what I tole Red about hisself an' his rabbit's hoof! We're ridin' between a coupla box cars w'ile I'm tellin' it to him. An' believe me, I *told* him!

"Ya big stiff," I says, "ya must be dead from th' neck up," I says. "Any guy that's dumb enough ta roost on a barrel of cider an' die of thirst," I says, "ain't got no license ta be outside a cemetery," I says.

"You was warmin' a whole crate of matches all night long," Red says.

"You're a frog-eyed liar," I says. "It was a box of soap," I says. "Anyway," I says, "a guy can't tell what's in a box," I says, "but any guy with th' brains of a Mike Robe," I says, "should ought ta be wise ta what comes in *kegs*," I says.

"I never thought –" Red says.

"Ya *can't* think with th' kind of a hat-rack you've got," I says. "It's a wonder," I says, "that they ain't a army of button-makers chasin' ya," I says; "a dome like you got is only good ta make buttons outa," I says. "I was readin' th' other day," I says, "about a doctor in Chi that grafted a new jawbone on a guy," I says. "It won't be long before them doctors can put a whole new head on a guy," I says, "an' that's what you need, Red," I says.

After that blastin' I give him, Red don't talk much ta me fer a coupla days. He's so cool that if he had fleas they'd jump off of him on ta a cake of ice jest ta get their feet warm.

It wasn't until th' poker game on Sunday that Red begins ta thaw out. He was havin' fifty-seven kinds of luck, an' any guy is liable ta be good-natured when he's rakin' in th' darb. He has his rabbit's foot on th' table in front of him an' he rubs it with his mitts fer luck before he picks his cards up. Th' bunch is kiddin' him an' we're rubbin' th' charm, too, tryin' ta rub some of th' luck off of it fer ourselfs.

It's a six-handed game of jack-pot an' th' cards is runnin' high. It looks like Red was goin' ta clean up till he goes fer th' fam'ly jewels on four kings. He sure went fer th' entire works on that fistful of cards, an' he don't call till his last iron man is in th' pile.

Every one else was raised out exceptin' th' Wild Man. Th' Wild Citizen is nursin' a pat straight flush; not very big, only from th' deuce ta th' six-spot, but it was jest big

enough ta make Red look like a sucker from th' tall an' uncut sticks.

After th' game, when Red nicks me fer half me bankroll, I says:

"Fer th' lova Mike, Red, slough that rabbit's hoof. It's liable ta be so lucky that ya'll ketch smallpox or somethin' like that," I says. "Lookit yere mitts now," I says.

I was jest kiddin' with him because they was big red spots all over his mitts.

Red takes a slant at his mitts.

"I don't know what that is," he tells me; "poison iv'ry, maybe," he says.

I don't think nothin' more about th' poison iv'ry until my own mitts is spotted up like Red's the next day. They is some more of th' bunch that has th' same trouble. Pretty soon them red spots climb all over us an' we itches an' burns somethin' fierce.

One of th' boys gets leary about it bein' some kind of a disease that 'll croak ya off. This guy goes ta a doctor. Th' next thing we knows they is six of us corralled in th' village cooler because they ain't got no regular quarantine.

Th' Old Man is ravin' like a maniac because th' other four guys, except me an' Red, is either freaks or performers. Maybe th' six of us in th' cooler wasn't ravin' about bein' corralled! Th' Wild Man was th' tamest of th' bunch.

At first th' Old Man thinks we was jest pinched fer robbin' a post-office or some little thing like that, an' he sends a squad of strong-arms ta wreck th' coop an' get us out. But when he gets hep that we've got some disease that's ketchin', th' show pulls out without us.

Th' doctors wises us ta what th' disease is; I fergets it now, but it sounds somethin' like th' name of a Polish wrestler. We gotta stay in th' howse-gow a coupla weeks, th' doctors say, so's we won't spread th' trouble. They asts us if we knows where we ketched it.

I don't know where we got it, but I blames Red an' his rabbit's hoof. Of course th' village yaps gives me th' laff. But they is one hep-guy doctor that don't belong in town. He comes ta give us th' once over an' I'm still ravin' about th' rabbit's hoof bein' th' jinx that put us in th' cooler. At first th' wise guy laffs, an' then he looks like he was thinkin'.

"Where is this lucky charm now?" he asts me.

"Right on th' big boob's watch-chain," I tells him, an' points at Red.

Th' wise guy gets a pair of rubber gloves an' cops th' charm from Red. Then he glims it over under some kind of a glass. Next he busts it open, an' Red wants ta start ta wreck th' joint when he sees his charm is bein' jimmied open.

"Ya see," says th' doctor, "this is only a immertashun rabbit's foot. They is a piece of wood in it fer a bone an' th' claws is made of cellerloyd. That fur is ratskin an' it's jest loaded with th' Mike Robes that give ya that itch."

Then I gets wise ta myself an' tells him about th' poker game that th' six of us played an' how we was rubbin' th' charm fer luck.

"That's jest how ya ketched it," he tells us. "It's pretty bum luck," he says, "because ya'll have ta stay here fer a coupla weeks more."

On th' level, if th' tin-star dicks hadn't pried us off of Red's neck we'd of pulled him apart. Can ya blame us fer bein' sore? I knowed all along that that bling-bling rabbit's hoof was ta blame, but of course, I wasn't hep ta th' Mike Robe part of th' deal.

Fer th' first few days we takes turns at pannin' Red fer th' trouble he got us inta. Then we eases off of him because we sees th' funny part of it.

We starts a kind of secret society an' agrees not ta wise up th' rest of th' bunch when we joins th' show again. We don't have any dues ta pay in our society, but Red is treasurer. After we gets back ta th' show th' rest of th' gang was wonderin' why Red bought so much of th' foamy stuff fer th' five of us what was in th' cooler with him.

An' th' bunch ain't hep about th' rabbit's foot yet.

DARING SAVES A RAILROAD BRIDGE.

SOMETIMES a railroad executive has to exercise daring, and destroy property entrusted to him in order to avert greater loss. It is a situation that calls for quick thinking and resolute decision, and often there is no time to wait for orders from above and avoid responsibility.

A TRAIN OF TEN HEAVY CARS, LOADED WITH BRICK, WAS PURPOSELY SHUNTED INTO THE RIVER, WHERE IT FORMED A LEVEE THAT SAVED THE BRIDGE FROM BEING WRECKED

An example of this occurred during a record-breaking flood in Los Angeles—one of those winter downpours which cause a great deal of damage in a short time. In the bed of the Los Angeles River, usually a stretch of dry sand, the flood waters rose until they threatened the Aliso Street bridge.

Other steel and wooden bridges had already gone out, together with some miles of track along the banks. A sudden shift in the torrent began washing out the earth from about the piers of this structure, and if it went down, the right-of-way of the Santa Fe on the bluff above the stream would cave in, causing great damage.

Superintendent Hibbard saw this danger and acted promptly. He ordered a train of ten heavy cars loaded with brick to be shunted into the river, and at his command they were driven at high speed and turned loose, to crash into the stream, fifty feet below.

There they formed a levee that diverted the current away from the bridge, and saved it, together with several industrial plants and the railroad yards. The cars that were sacrificed cost a few thousand dollars, while the property that was saved was worth millions.

This is not the only instance of a railroad's daring use of its equipment for the common good. An equally courageous feat was performed by the Missouri Pacific when in the Kansas City flood of 1903 it loaded its bridge over the Kaw from end to end with locomotives. It was a tremendous chance to take, but proved worth while, for this was the only bridge left to carry traffic and save a great many lives that would have been lost.

AH, THE URBANE EXPRESSGENTLEMAN!

Old-Timer Contrasts the Courteous Adonises of To-Day with the Fresh Rough-Necks of Twenty Years Ago.

BY A. F. HARLOW.

NOWHERE is the modern improvement in business courtesy and attention to the needs of the customer better illustrated than in the express business. When I enter an express-office nowadays I am greeted with a courtesy amounting even to punctilio which is a never-failing source of wonder to me.

It is so different from the old days, twenty to thirty years ago—when I was in the business, I may add. Then we looked upon the customer as a sort of necessary evil. We waited on him if we had to, but in so doing we made him understand and feel keenly his inferior and dependent position.

The Deuce with Him!

If you were at the receiving-counter, for example, and a customer came in, you paid no attention to him, but went right ahead balancing up your cash, thus indicating to him that, no matter how large a shipment he intended making, you had business on hand which rendered his small concerns practically negligible.

If he spoke to you in an effort to divert your attention, you either ignored him or withered him with a look. And when you finally deigned to notice him, and to concentrate your giant intellect upon his trivial affair, you did so with a slight impatience, as one who finally notices an importunate child.

If he asked you the almost inevitable fool question, you might speak sharply to him, after the manner of some, or you might, with an exaggerated air of patience, lean an elbow on the counter and give him his answer slowly and distinctly, in silken tones that were a caricature of suavity and courtesy.

Express companies, and for that matter railroad companies too, were pretty independent in the old days. Employees of those corporations might lord it over the humble shipper or traveler like Belshazzars, if they wished—the company didn't care.

The express companies evidently felt that their independence was absolutely permanent, and they asked no odds of anybody. There was a certain class of stuff which you simply had to ship by express. It was too large for the mail, and freight service was too slow; so why should the express companies worry?

The stock of all the leading express companies was held far above par, and that of at least one company was never quoted on the exchanges.

"Let 'Em Wait!"

One of the big companies used to have a burlesque coat of arms which they used on their private stationery, on the celluloid covers of their passes, etc.; of course the public never saw it.

The crest represented the god Mercury, who is reputed to have been the original express messenger, seated, almost reclining, in an easy, negligent attitude, idly balancing his scepter on his knee. On the field were three turtles, close competitors with the snail for slowness, each bearing an express-package on its back, and supposed to be moving at its usual speed.

The motto which encircled this design was "Let 'em Wait!" We used to smile with keen relish over that clever conception.

Neither race, color, nor present condition of affluence and power sufficed to save the pride of the customer of that day—all became as mendicants before the mighty expressman. Close personal friends and really pretty girls were, of course, always exempt from the haughty mien and the glassy stare.

Just Chumps.

Still, there is something to be said on the side of the expressman. People who have studied such things or had experience of their own are well aware that men in public positions, such as the expressman, the rail road ticket-agent, the baggageman, and the conductor, are called upon to answer more fool questions, and to answer a given fool question a greater number of times, than any other men living. After an experience of several years with the public, I was ready to assert, in my pessimism, that fully fifty per cent of mankind are solid ivory from the collar up.

For example, back at the little junction-point where I began my brief but brilliant career, the express-office and the baggage-room were adjacent to each other in the union station. Painted upon the doors of the respective rooms, at the height of the average person's eyes, and in letters fully eight inches tall, were the words:

Boobs, That's All—Boobs.

Upon entering, one could easily look about him and discover that this room was stacked with boxes, packages, chickens, castings, and what not, while the other contained only trunks and traveling-bags. Yet every day half a dozen or so people came into the express-office and mutely held out baggage-checks toward us, or informed us that they had a trunk outside which they wanted checked to Kokomo or Loogootee.

In St. Louis the Union Station express-offices occupied a long row of brick buildings running back into the block from Clark Avenue. As the Adams, where I worked, was the one immediately adjacent to the street, we caught not only our own customers, but also nearly all those who wished to do business with the American, Pacific, "States," and Wells-Fargo; and this in spite of the fact that large signs setting forth the name of the company decorated each of the buildings.

It is not surprising that we grew a bit crusty with people who need not have bothered us had they only used their eyes.

Nowadays, however, we would be expected to curb our impatience and smile sweetly while saying for the fortieth time that day, "No, ma'am, American is third building down," "No, sir, we cannot accept anything for Oblong, Illinois," etc., etc.

Back in Hicksburg there was a family who used to call at the express-office every day just as sedulously as they did at the post-office. Whether they ever received any mail I know not, but it is a fact that they did not receive a shipment of any character by express during the two years of my incumbency there.

They never lost hope, however, and every day some representative of the family, generally a big splay-footed, slatternly, overgrown girl would shuffle into the office and inquire expectantly:

"Anything here fur Mich'l Higgins?"

Oh, What Muttonheads!

Then there were the folks who, when you informed them that you had received no box, package, or other parcel for them, would inquire:

"Well, when do you think it will be here?"

No joking! There really are such people!

Then there were the people who kicked on the freight charge asked on a shipment, and wanted to haggle with you; who thought that the agent fixed the rate himself, and who couldn't see why express rates were higher than freight.

There was the lady who gushed:

"Oh, don't you get simply *crazy* to know what's in all those packages? I just *know* I'd have to open every one of them!"

And the people who ask:

"Why do I have to ship this by Pacific Express? Where is that express company?"

"I didn't know there was more than one express company."

"What do they have so many express companies for?"

"What roads does the Adams run on?"

"What do they charge for a ticket to Poplar Bluff?"

"What's the best way to git to Ooltewah, Tennessee?"

"They won't joggle this box any, will they? I've got jelly and preserves in it, with only papers tied over the mouths of the jars. They just must handle it carefully!"

And millions of other idiotic remarks, some of them worse than these.

Oh, yes, there are plenty of things to grate on the expressman's nerves, already tensed by working at high pressure, and in my day we used to break loose and exhibit our temper over such annoyances whenever we felt like it. The fact that such doings weren't good business worried us not at all, and apparently concerned our superiors but little.

The least appearance of conceit on the part of a customer was apt to bring reprisals from the expressman. It always irritated us to see a fellow giving himself airs, and we couldn't resist getting back at him.

One day when I was on the receiving-desk at St. Louis, a plump old gentleman with a big white mustache, clad in a uniform that was covered with gold braid, entered and desired to ship a package.

Took the Old Geezer Down.

"Who is the shipper?" I asked, beginning to write the receipt.

"I am," was the response.

With an air of kindly patience, I leaned on the counter and tapped it with my pencil.

"And your name?" I inquired.

"Reilly," he replied with a shade of annoyance.

"R-i-l-e-y, I presume," said I, writing.

"No, R-e-i-l-l-y," he snapped.

"And your first name," I pursued, showing signs of extreme weariness.

"Matthew, sir! Matthew Reilly, chief of police of the city of St. Louis, sir! I thought every man, woman, and child in this city knew me!"

"Never heard of you before, Mr. Reilly," said I cheerfully. "You haven't been chief long, have you?"

I really feared apoplexy, the old gentleman's face was so purple.

I take no credit to myself for this impudence. I merely present it in an impartial way as a sign of the times. The atmosphere of the office was saturated with it, and I couldn't help being infected.

But how could we be pinked and primped with courtesy when we passed our days in a rude and uncouth atmosphere, overcharged with high temper, and seething with disputes and quarrels and browbeating and tattling?

In the big city offices, where the hours were overlong, the work was hard, and we had much responsibility, our nerves were strung to high tension, and at a single rude touch there would be loud discords of temper. (This, I think, was particularly true of the St. Louis office during the exposition year 1904.)

Bickered with Each Other, too.

We were churlish and contentious in our dealing with each other, and it quite naturally followed that we were impudent and irritable when dealing with the public.

Statler, the hotel man, states that one of his iron-clad rules is that employees of his hotels must be uniformly courteous in their attitude toward each other; there must be no bickering. It's one of his greatest ideas. The organization or the family at peace within itself will be apt to turn a smiling face toward the person on the outside.

As a horrible example of the impoliteness prevalent among ourselves, I might cite you one Billy McGilligan, of the St. Louis office. Billy was "wagon-boss," which means that all the drivers and all the stablemen were technically under his control.

He was a smoldering volcano which erupted at intervals of from five to ten minutes. His face was always red and apoplectic in appearance, as if he were just about to burst with rage, and he walked

with quick, stumbling steps, with head thrust forward, as if he were just on his way to the job of beating somebody to a pulp, and so enraged meanwhile that he hardly saw the ground before him.

He never spoke a sentence without a curse, seldom returned a satisfactory answer to a question, or did so without a jibe at the ignorance of the questioner. If he were called to the phone, his first remarks generally ran:

"Who's that? Jenkins? What the —— do *you* want?

Old-timers about the office still speak with bated breath of the famous conversational duel between McGilligan and Breed. It was on that summer morning in 1904 when the grand old Liberty Bell came into the Union Station on its special train for its extended visit to the Louisiana Purchase Exposition.

We, in common with most other males about the station, had swarmed out on the platform and yelled ourselves out of breath. Billy and Breed stood near each other. Breed, by the way, was an Englishman.

Cussing Contest Was a Riot.

"That," said Billy to the public in general, "is the bell we rung back in '76, when we licked —— out of the —— English!"

Breed replied in kind. As a purveyor of pungent and picturesque profanity, he gave no odds, when thoroughly aroused to Billy McGilligan or any one else.

The wordy riot that ensued is still an awe-inspiring memory about the office. Men who were there will tell you that enough good cuss-words were wasted on that day to have kept the crew of a tramp schooner working like beavers all the way from Frisco to Hong-Kong.

Strange as it may seem, I can recall but few fights. We simply wrangled and swore and called names and industriously reported each other to the boss; which would seem to indicate that we weren't such bad medicine, after all, but just a bit nasty in the temper.

Personally, I must insist that I was never as vicious toward the defenseless customer as some fellows I have known, for I have always been a hater of strife and ill-feeling. I can truthfully say that I never insulted any one unless I was suffering from indigestion or loss of sleep or great nervous strain occasioned by pressure of work, or unless the customer were a profound chump or asked me something that I couldn't answer—in which cases I held myself unaccountable.

I was greatly shocked upon an occasion soon after I had left the express service by my treatment in an express-office in Indianapolis. A friend, upon leaving the city, had forgotten his umbrella, and sent me a hurry call for it to be expressed to him.

I grabbed it one Saturday afternoon, as I was leaving town for the week-end, and entered one of the depot express-offices to ship it.

I knew that I might as well throw it under a street-car or into a sewer as ship it unprotected.

"After Many Days It Shall Return."

I also knew that around an express-office there were nearly always fragments of packing-boxes, crates, etc., broken off by the boys in their laudable zeal for handling all freight with the utmost celerity and efficiency; and I counted on tying the umbrella to one of these bits of plank for shipment.

As I entered the office, some three or four men were sauntering to and fro, presumably about their work. Like the experienced expressmen that they were, they paid no attention to me.

I followed first one and then another around for a while, until I tired of the sport, and then I decided to speak very sharply to somebody. So I steered alongside a man who was passing, and remarked:

"Say! I want to ship this umbrella."

"Go ahead and ship it!" he advised briefly, without glancing at me.

"I wonder if there is a piece of board around here that I could tie alongside it?" I hinted, with admirable self-control.

"Naw!" he snarled in a raucous tone which rasped my nerves frightfully. "This is an express-office, not a lumber-yard!"

I was greatly annoyed, and my restraint completely gave way.

"Judging from the character of the in-

mates," said I icily, "a stranger would be apt to mistake it for one of those Grant County skunk-farms."

And I stalked out with much dignity before he could think of a retort, and went to another express-office, where I was served but little better than at the first one.

I could but regard my treatment as nothing short of indecent. I felt that the arrogance of the express companies and their employees should be checked, if necessary, by legislative enactment.

His Own Stuff.

When I related the incident to Hopkins a few days later he laughed loudly and mockingly.

"Why, hang it!" he sneered. "You were just as bad when you were in the business, and a darn sight worse!"

Unwilling to bandy words with an individual so petty and quarrelsome, I turned away with admirable forbearance, and left him abruptly. Hopkins may have his good points, but in my opinion his bull-necked perversity and insufferable impudence render him, on the whole, an undesirable citizen.

Ah, the good old days! Fortunately for the business, they are rapidly passing—nay, they are past!

Who ever heard of an express company advertising in the newspapers twenty-five years ago? The fellow who suggested such a thing would have been regarded as a sufferer from softening of the brain.

To-day you pick up your morning paper and read therein a courteous, well-worded, two-column appeal to the public to "ship by express." The ad is illustrated with a full-length portrait of a tall, graceful, clean-shaven young Adonis with an intellectual brow and a square jaw, just like those of the young men in the collar ads.

The package under the arm, the delivery-book, the natty cap, and the businesslike pencil poised atop the ear, mark him at first blush for an expressman. Gazing upon his frank, smiling countenance, you can see at a glance that he would never "sass" a patron of the company, no matter how much of a crank or a muttonhead the patron might be.

I think that the parcels-post helped to awaken the boys and put them wise to the fact that business in general was becoming more urbane, and that sharp competition was making courtesy and accommodations for the elusive customer very desirable.

Advent of Women Made for Politeness.

Moreover, the advent of women into the express business has exerted a taming and softening influence. In my day only men worked for the companies. If there was a woman employed by my company anywhere, I never saw her or heard of her.

Take a big city office, with one hundred or two hundred employees in it, and every human being from roof to cellar was a male. There were few typewriters in use in the offices, though this was no longer ago than the early nineties—most letters were still written with a pen; but what few typists there were were men.

To-day I picked up the handsomely printed and illustrated magazine issued by one of the express companies for distribution among its employees. There is a story, a travel article, items of general interest regarding the express business, and kindred affairs, and much helpful and educational matter.

You see on one page a half-tone portrait of Ezra Thrasher, the popular and hustling agent for the company at Poison Spider, Wyoming, who increased the earnings of his office by over eighty per cent during the past year.

On another page there is a picture of Miss Amaryllis Johnson, the charming and efficient clerk in the office at Pawhuska, Oklahoma, who went out on the street and assisted a customer in ascertaining the market price of ginseng, which so delighted him that he wrote a letter to the superintendent about the company's wonderful service. You see also a group-picture of the members of the Employees' Club in the Chicago office, and you discover that nearly half of them are ladies.

Ah, me! It isn't like the old days, but it's better—it's better! As I look into the faces of those girls in the Employees' Club, I wish I were young again, and in the express business!

"BENEATH THE MARKERS."

BY ROBERT D. LUKENS.

THE observation platform is deserted. A while ago I moved my chair to a dark corner to insure privacy, but now my fellow travelers—all save one, who is writing at the desk inside—have retired. All lights but his have been extinguished. We two are left—he to his letter, I to my thoughts.

The miles are slipping rapidly behind, and the rhythmical hum of the rails is soothing to tired nerves. An occasional eddy of air finds its way to my chair from the rushing currents a few feet away.

A long, mellow "road-crossing" signal floats back from the giant engine up ahead. A few seconds later we flash by a country road and immediately afterward two semaphores. I mechanically note that our signal has dropped to red behind us, while the one governing the other track shows green—a clear block.

Without warning, and startling in its utter suddenness, comes a roar beside me. There are blinding flashes of light, and almost before my mind is awake two red markers are merging into one as they melt into the gloom from which we have come.

And then, comparatively, silence reigns once more. The miles slip endlessly by, and again the crooning hum of the rails is striving for mastery over wakefulness. But the passage of that flying mass of steel a moment since has awakened new memories. I see myself as a boy, eagerly waiting and watching for the trains which passed my father's farm. How I longed to be an engineer—to ride at the head of a passenger-train, its destiny at my command!

And then, down the years, to the giant Pacifics of to-day, powerful beyond the wildest dreams of the past! Even now, to be sitting in the cab of the 1582 (I noticed her number as I entered the train-shed, back there), my hand on her throttle as she reels off the effortless miles, would be heaven indeed.

In fancy I see the long, thin pencil of light playing on the rails for a thousand feet ahead, bringing out with sharp distinctness every rail and every tie, and creating weird fantoms in the darkness beyond. The pulse and throb of mighty power are beneath me and the big drivers below, revolving tirelessly, are forcing me and my precious freight through the night to the destination which each minute brings a mile nearer.

A long, low note—a station call—comes from ahead. The vision fades, and with it fade my hopes and dreams. Fate decrees that I must ride on plush. In fancy only may I occupy the longed-for seat-box.

Ah, well; what is, must be. I can only bow to the inevitable. But a sigh escapes me as I gaze down at the flying rails and live over the events of the past twenty-four hours.

Last night I was at the head of that other train. To-day I was pensioned.

LONDON'S TUBE CARS ON A MAIN LINE.

LONDON not long ago saw for the first time tube trains running in passenger service on a main line

The motor-cars, as they are called, were built originally for the Ealing extension of the Central London Railway, but war conditions prevented that project from going through.

Then the London Electric Railway completed its extension to Watford, and took over the new rolling-stock for its use. Now the tracks of this line merge into those of the London and Northwestern Railway, which have been reconstructed and electrified for the purpose.

Tube cars were made adaptable to main-line platforms by slightly raising the tracks. Passengers, in getting off the train, now step down from Northwestern and up from tube cars.

A notable feature of these cars is their shape. They are built to fit the circular contour of the tunnels. This provides ample room inside. The central door of the front car is built into the side in order to afford sufficient headroom for passengers.

The tube cars are about 48 feet long, and were constructed in England. Each is fitted with two General Electric 212 motors of 240 horse-power, geared for a free running speed of 30 to 40 miles an hour. The seating capacity is 32.

The ventilation system is an improvement on that provided formerly on Central London cars, for, in addition to the usual drop lights, a perforated air-duct extends the complete length of the car and is open to the air at the ends.

Both the photograph and data respecting this interesting innovation were supplied through the courtesy of Mr. Robert W. A. Salter, of London.

LONDON'S NEW TUBE CARS, EQUIPPED WITH G E MOTORS, AND BUILT TO FIT CIRCULAR CONTOUR OF TUNNELS

OLD TIMES WITH THE STYLUS-PUSHERS.

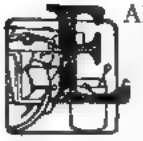
No Cinch to "Take Report" for the Press Associations When Opr Had to Make 8 Flimsies by Hand for an Average of 9,000 Words a Night.

"REPORT MAN," KING OF THE PROFESSION.

Stories Came Over the Wire in Skeletonized Form, and Were Then Filled in by the Telegraph Editor—"Patsy" Ayres and George Eitemiller Took 10,000 Words of News a Night without Error for Seven Months; Then Each Broke at the Same Time on the Same Word.

BY "J. E. M.,"

Author of "Old Times in Morse Shops," "Old Times with Morse Men," etc.



EARLY last summer, while in New York City, I called on an old-time friend, an ex-telegrapher whom I had known in Texas many years ago, when he was "taking report" for the Western Union Telegraph Company in one of the large cities of that great State.

It has been many years since this old-timer has touched a telegraph-key, but he keeps himself thoroughly posted in everything pertaining to the telegraph, and, so far as possible, keeps track of the movements of those few old-time wanderers, or boomers, that he had known and been associated with so many years ago.

This gentleman is now a prominent member of the New York Stock Exchange, and it is generally understood that he has been very successful in a financial way.

In the course of our conversation he informed me that since the RAILROAD MAN'S MAGAZINE put out its first number he has not skipped a copy, and that he looks forward to the date of issue as a red-letter day. Although a railroad man, he declared that he was more interested in the telegraph articles published in our magazine than he was in the real railroad stuff.

Wire and Rail Go Hand in Hand.

Of course, this is a matter of taste; but they go hand in hand—the railroad and the telegraph.

He was kind enough to say that my telegraph articles appealed to him, and then asked me why I did not tell something of the early days of the press associations—of the days when the leased wire direct into the newspaper office was only thought of, and not an accomplished fact, except between large centers like the lines from New York to Boston, New York to Chicago, and Washington to New York; of course, with a "drop" on the New York-Washington wire at Baltimore and Philadelphia. The "report," as it was called, was handled by

telegraphers in the main offices of the telegraph companies and sent to the newspapers by messenger-boys.

I have no doubt but that this will be very interesting reading to a large number of old-timers who read this magazine, and I am quite sure that it will bring back to them memories of some one whom they knew in the departed days, with whom they worked, either in the same office or on the same circuit, taking report thirty or thirty-five years ago, and even in the early days of the leased wire.

Before the time when the leased wire became a regular institution, a job taking report was regarded by the telegraphers of that date as second only to that of the President of the United States.

In order to handle such a wire it was very necessary that the operator be a real star or top-notcher in the profession. He had to be able to make a clean, unscratched, very readable copy, a copy which the printer could read without difficulty, and which the telegraph editor of the newspapers that were served could edit without turning gray.

The Aristocratic "Report Man."

Such jobs were avidly sought for by the man who could do the work, as the salaries paid were considerably in excess of those paid for handling ordinary commercial messages. The "report man" was really the aristocrat of the telegraph profession, looked up to by the less fortunate operators and idolized by the students and check-boys.

You must remember that this was years before the typewriter was even remotely thought of in connection with the telegraph. Everything was handled with a pen, or pencil, or "stick," as we called the stylus. At small points where there was but one paper to serve, the operator copied this report, which ran from 7,500 to 10,000 words nightly, with a pencil on soft paper provided for that purpose by the newspaper.

In relay offices and places where there were more than one newspaper to serve, the report was copied with a stylus on a stack of "flimsy sheets," with a carbon between each two sheets. In Galveston, Texas, and also in Dallas, which were both relay points, eight copies were taken; and believe me, boys and girls, to punch through eight copies of "flimsy" for an average of 9,000 words per night at the speed which the sender was to maintain in order to keep from getting swamped, and to do this seven nights a week, was no child's play. I know, because I have been there.

Putting the Meat on the Skeleton.

This report was taken down by the operator in skeletonized form and was filled in by the telegraph editor, who certainly earned his salary in those good old days. For instance, the operator would take this down:

> Newyork—Johnsmith welk citizen Cincinnati found hanging barn Harlem here smorning. Suicide. No cause. Here from home lasnite Hoffman House. Not seen after registering and went to room. Mystery. Good health; plenty money.

This item the telegraph editor would translate and fill out somewhat as follows:

> NEW YORK.—John Smith, a well-known citizen of Cincinnati, Ohio, was found hanging in a barn in upper Harlem early this morning. Mr. Smith arrived in New York from his home city last night, and went direct to the Hoffman House, where he registered and was assigned to a room. He was not seen about the hotel after registering, and it was thought by the employees of the hotel that he had retired for the night. There is much mystery surrounding the case, as Mr Smith was apparently in the best of health and spirits and was amply provided with money

You can well imagine that the telegraph editor's lot was not a happy one as compared to that he enjoys to-day, when a neatly typewritten copy is handed over to him, properly punctuated and paragraphed, and practically edited and ready to be set in type. Indeed, the only real cares that the modern telegraph editors have are the composition of the head-lines to the story, the checking up, so far as possible, of the statements made in it, and the exercise of care to avoid libel.

I have before me, as I write, a partial list of the prominent telegraphers of that bygone day. Some of them have given and taken their last " 30 " and now are resting peacefully where bad wires are unknown and repeater trouble is no more. Others, still living, have attained high places in the business or political world; still others have made for themselves enviable names in the world of letters; while some have dropped into obscurity.

The Rivalry of Patsy and George.

Probably one of the very best-known telegraphers in the country before the advent of the typewriter was A. S. Ayres—" Patsy " Ayres. At one time the honors were equally divided between Patsy and George Eitemiller.

At the time of which I speak George was taking reports in the Pittsburgh, Pennsylvania, office of the Western Union Telegraph Company, while Patsy was located at Columbus, Ohio, on the same circuit.

It is said that each pushed his stylus over ten copies of news flimsy every night for seven consecutive months—about two hundred and fourteen nights—each night averaging 10,000 words, thus totaling 2,140,000 words, without a break. And when they did break it was at the same time, on the same night, and on the same word.

They fought each other for right of circuit for fifteen minutes while trying to break the sending operator on the simple word " mill," each receiving it " 700." Probably it was the sender's fault, though 700 and mill are composed of the same Morse characters. However, a reader would naturally think that there was something wrong with the telegraph editor's head-piece if he should read in his morning's newspaper that " such and such a 700 turned out more flour in Minneapolis than all of the other 700's in this State."

Enter the Typewriter.

Then the typewriter came into general use, and the leased-wire system was being developed by the press associations. Mr. Ayres kept pace with the march of progress; he was one of the first to adopt the machine, and in his time worked pretty nearly every heavy circuit, taking reports in the eastern and southern sections of the country. Upon the organization of the old United Press by Walter P. Phillips, Patsy became connected with the association and remained with it until it went out of business in 1887 or 1889.

At that time he was assistant general eastern manager, with offices located on the third floor of historical old No. 195 Broadway, New York City. Mr. Ayres passed away in Cincinnati, Ohio, some seven or eight years ago, respected by all who knew him, whether in or out of the telegraph and newspaper field. Right up to the time of his death Patsy was a master of that good, pure Morse hand-sending, which is becoming rarer each year as the " bugs " are coming into more and still more general use.

W. L. (" Fat ") Waugh was another of the old-timers who took report and also sent it before the days of the leased wires. After the leased-wire service was inaugurated he went with the Associated Press, where he remained until his death early in the spring of 1916.

Waugh's Wrist Always Stood By Him.

Waugh was also one of those old-timers who never lost his grip and never was compelled to adopt a sending-machine, although for many years he was the sending operator on one of the very heaviest wires in the country the " first west " Associated Press wire out of New York, which serves such cities as Buffalo, New York; Cleveland, Ohio; Cincinnati, Ohio; and Chicago.

His arm never failed him, and the Morse that he sent over the wire was a joy to listen to. I knew Fat very well in the early days, and especially during the telegraphers' strike of 1883. We were both members of the same " local assembly," as separate units of our organization—the Brotherhood of the Telegraphers of the United States and Canada — was known. Fat was secretary and treasurer of L. A. 2175, located at Jersey City, New Jersey, while I was the " inside guard " of the same local assembly. Mr. Waugh took quite a

prominent part in that historic struggle Another old-time stylus-pusher who stood in the front ranks was J. B. Taltavall, now the publisher of the *Telegraph and Telephone Age*. Mr. Taltavall, as has already been stated in the RAILROAD MAN'S MAGAZINE, was one of the first operators in the world to use the Phillips code. He was also very active during the 1883 strike.

Taltavall, Dana of the Morsemen.

In connection with John Mitchell, late of the New York *Herald* staff, he published and edited the official organ of the telegraphers' organization. It was called the *Telegraphers' Advocate*, and was one of the brightest and best trade journals of that day. The present *Telegraph and Telephone Age* is successor to the *Telegraphers' Advocate*, and Mr. Taltavall has been at the head of the publication since its inception early in 1883.

Mr. Mitchell, like Mr. Taltavall, was an old stylus-pusher, being the report operator at New Haven and other New England points for a number of years previous to the strike. During the strike of 1883 Mr. Mitchell was master workman of the New York local assembly. Upon the cessation of hostilities, when we buried the hatchet, Mr. Mitchell accepted a position on the *Herald's* telegraph staff, and was for many years night manager of that great newspaper's telegraph department until his death in 1908.

Speaking of the struggle of 1883 brings up another old report man or stylus-pusher who led us in that great fight—John Campbell. I know that scattered throughout the country there are many old-timers who knew him, but maybe have not thought of him for years. In his day Mr. Campbell was very prominent in labor circles, and it was mainly through his efforts that the Brotherhood of the Telegraphers of the United States and Canada became a reality.

Upon the organization of the brotherhood Mr. Campbell was elected to head it, with the title of Master Workman. We were a district assembly, as it was called, of the Knights of Labor, which at that time was a very powerful combination of labor organizations headed by that well-known labor leader, Terrence V. Powderly.

Mr. Campbell, I believe, came from Steubenville, Ohio, originally, and copied report at Rochester, Syracuse, Buffalo, and other points in New York State. After the strike of 1883 Mr. Campbell was appointed division superintendent of the Postal Telegraph Company at Pittsburgh, Pennsylvania, where he remained for a number of years, passing away some time ago at a ripe old age.

Of course it could not be expected that the volume of news carried over the wires in the days of the stylus was as great as to-day, when the typewriter is used exclusively in connection with the Phillips code; but by the system of skeletonizing the newspapers of thirty or thirty-five years ago made a very good showing indeed.

Fast Men Down South.

Not all of the stars in the report and stylus-pushing group were confined to north of the Mason and Dixon line by any means. They had some real fast men in the South, too. At Galveston, Texas, which was the relay point for the State, Bob Beal and Bert Muir alternated every other night on the sending and receiving sides.

Both of these men are still in the game. Mr. Beal is chief operator for the Mexican Cable Company at Galveston, while Mr. Muir fluctuates between Dallas and New Orleans.

F. C. Tignor was the stylus-pusher at Fort Worth. Everybody knows "Tig" and his copperplate copy. Mr. Tignor is now located in New York City, where he is prospering in the real estate and insurance business.

It was along about 1884 or 1885 that the press association commenced the leasing of wires and employing their own operators independently of the telegraph companies. Of course, at Washington, Philadelphia, New York, and perhaps in one or two other of the larger cities, a leased-wire service had been maintained, but the general extension of this system was not begun until about the years mentioned above.

It was at about this time, too, that the United Press—the original United Press—came into prominence as a real competitor that would make the other press associations take notice.

Lots of A. P.'s Then.

In New York State there were two other concerns, namely, the New York Associated Press and the Associated Press of the State of New York. In Chicago was located the Western Associated Press. William Henry Smith was its head; he served the papers in the middle West and clear through to the Pacific coast. The Western news was carried over the public wires, however, and it was not until 1894 that the far West and the Pacific coast newspapers were served by leased wires.

In the south, too, there were no leased wires until about 1886, when the Western Associated Press leased a system of wires from Chicago to New Orleans, taking in Cincinnati, Louisville, Indianapolis, St. Louis, and Memphis. The Eastern connections were the New York Associated Press and the New England Associated Press, with which concerns they exchanged news.

About a year later the leased wire was extended to St. Joseph and Kansas City, Missouri, and thence to Omaha and Denver. Each of these points was a distributing-office where the report was "cut" or skeletonized and filed with the telegraph companies to be sent to clients in the smaller cities.

On the first South wire out of Chicago were some men who have since become prominent. At Indianapolis was "Jerry" Foley, an all-around telegrapher who had worked with the stylus before the leased-wire system was inaugurated. Jerry is now and has been for two years private secretary to Senator John W. Kern, of Indiana, and is quite a prominent figure in Indiana politics.

Eugene W. H. Cogsley, now a prosperous business man in western Pennsylvania, was located at Cincinnati as chief operator. Mr. Cogsley remained in Cincinnati as head of the southern circuit for a number of years, and then was made assistant superintendent of leased lines of the Associated Press, which in the mean time had been organized, taking in the Western Associated Press.

The United Press in 1892 obtained temporary control of the New York Associated Press. A struggle ensued between the Western Associated Press, which was reorganized under the name of the Associated Press and the United Press, and in 1898 the United Press passed into the hands of a receiver.

The Associated Press of the State of New York was tributary to the New York Associated Press and followed the fortunes of the latter organization.

At Memphis on the southern circuit was Michael J. Connelly, one of the gilt-edged telegraphers of that day. Mr. Connelly was later appointed executive agent at Memphis, having immediate charge of the entire district south of Memphis and west of the Mississippi River. He is now, and has been for ten or fifteen years, State labor commissioner of Tennessee.

Career of A. C. Thomas.

After the amalgamation of the Western Associated Press and the New York Associated Press, A. C. Thomas was appointed superintendent of leased lines with headquarters in Chicago. Mr. Thomas had been an assistant to William Henry Smith, the head of the old Western Associated Press, and was now made superintendent of telegraph of the new Associated Press.

Mr. Thomas had full charge of the maintenance and operation of the leased lines of the association throughout the country, and of the employment of all its operators. He filled this difficult position for many years, as well as administering the affairs of the central division of the press association, and retired about ten years ago.

Mr. Thomas was for a long time bitterly opposed to the then comparatively new Phillips code, and had invented a code of his own, which he called the Associated Press code, and which was for several years in general use on the wires of the Associated Press. I remember one time, in answer to an application for a job from me,

in which I stated that I was familiar with the Phillips code, Mr. Thomas said that he had no vacancy at that time and even had he one he would hesitate to employ any operator who used the Phillips code.

Of course he changed later on, when the Phillips code was adopted as the only standard code for press reports, and became an enthusiastic Phillips code man.

The first leased-wire service west of Denver, to the Pacific coast *via* Salt Lake, was established by the Associated Press in the spring of 1894. The matter was relayed from Denver to Salt Lake, of which office Mr. J. C. Vigus had charge. I do not remember the name of his associates.

The chief operator in the San Francisco office, which was a distributing-point of the Pacific coast, was George Duey. He was afterward an editor of the Cincinnati *Enquirer*, and was shot and killed by a policeman in that city when going to his home from work early one morning. Duey was assisted in San Francisco by Ben McInerney, now chief operator for the International News Service at that point, and Bob Geislich, who, I understand, is now chief operator for the Associated Press at San Francisco

Growth of the Old U. P. Under Phillips.

In the mean time for several years the United Press, under the general management of Walter P. Phillips, was spreading out rapidly and leading the Associated Press a merry race. Newspaper after newspaper deserted the older organization to cast in with the United Press, until for a time it looked as if the United Press had the upper hand and would untimately absorb its chief competitor.

It is a noteworthy fact that every official of the old United Press from the general manager down was a telegrapher and an expert. It is not necessary to tell of Mr. Phillips, the general manager; every operator in the country knows of him. In New York, as general Eastern manager, was Fred N. Bassett, one of the first men in the world to use Mr. Phillips's code in newspaper telegraph work.

Mr. Bassett in his day was noted for his beautiful copy, which has never been excelled even by those old masters of the craft, Eitemiller and Mullen. I lost track of Mr. Bassett, but I learn that he died some five years ago.

The southern division was directed by the late P. V. Degraw, whose offices were located at Washington, D. C. Mr. Degraw, after the consolidation of the United Press and the Associated Press in 1898, was appointed fourth assistant postmaster-general of the United States, and served several terms of four years each in that capacity. He died a year or two ago.

So far as possible Mr. Degraw filled the positions on his office staff with telegraph operators who had worked for him in the southern division of the Associated Press. His private and confidential clerk was Ernest Dyer, an operator who took report in the old days at Cumberland, Maryland.

It is said, and undoubtedly it is true, that one desiring an interview with Fourth Assistant Postmaster-General Degraw first saw Mr. Dyer in the anteroom. This room was connected with Mr. Degraw's office by a little dinky telegraph line. Mr. Dyer transmitted the visitor's name and the nature of his business over this line to his chief, who, if the visitor was welcome, so notified his secretary by wire.

In the Western division A. L. Susesman was general manager, with headquarters in Chicago. Mr. Susesman, like Mr. Bassett and Mr. Degraw, was an expert operator. So also were his two sons, A. L. Susesman, Jr., and Louis, who now compose the well-known law firm of Susesman and Susesman, of Providence, Rhode Island. Mr. Susesman died at the home of his son Louis in 1914.

George V. Hobart's Early Days.

One of the men who were employed under Mr. Degraw and who had worked the night wire, relieving Mr. Dyer at Cumberland, was George V. Hobart, the humorist, author, and playwright. Mr. Hobart was the originator of the *Dinkelspiel* stories of a generation ago, and author of "Experience" and other popular theatrical productions.

Mr. Hobart worked for the United Press at Cumberland for some length of time,

resigning to accept a position on one of New York's leading dailies. His rise there was rapid; but, becoming interested in the theatrical line, he threw up the newspaper game to devote his entire time to the production of plays. It is understood that he has accumulated a fortune in this profession.

Up to 1892 the country south of Washington, District of Columbia, and Memphis, Tennessee, was without leased-wire service, except only New Orleans, with a "drop" at Little Rock, Arkansas, and Jackson, Mississippi. In 1892, however, Hon. Patrick J. Walsh, editor and publisher of the Augusta, Georgia, *Chronicle;* Clark Howell, of the Atlanta *Constitution;* and Frank P. Glass, of the Montgomery, Alabama, *Advertiser*, got together and organized the Southern Associated Press.

Other newspaper men in that zone quickly became interested, and in a very short time the Southern Associated Press was a lusty youngster, having among its clients, aside from the papers listed above, the Birmingham, Alabama, *Age-Herald*, the Mobile *Register*, New Orleans *Picayune*, Macon, Georgia, *Telegraph*, Richmond, Virginia, *Times*, Jacksonville, Florida, *Times-Union*, Savannah, Georgia, *Herald*, Raleigh, North Carolina, *Post*, and others which I do not now recall. Mr. Walsh, who was afterward United States Senator from Georgia, was the president, treasurer, and general manager, and Mr. Glass was secretary. C. H. Morris was the first and only superintendent.

A. P. and S. A. P. Swapped News.

Arrangements were made with the Associated Press by which news was exchanged between the two concerns. The exchange offices were at Washington, District of Columbia, where the Southern Associated Press maintained an office and an operator, and at Atlanta, Georgia, which was Mr. Morris's headquarters and the sending point for Alabama and Georgia. In the Atlanta office there were employed as operators Mr. G. B. Wilkerson, afterward editor and publisher of a daily paper at Roanoke, Virginia, and Horace G. Martin, who has made himself famous by his invention of the Martin vibroplex. Horace afterward went to New York with the Associated Press, and it was while working in that office that the idea of the vibroplex first presented itself to his mind. Every operator knows with what success it has met. The name of Horace G. Martin might be said to be better known among the telegraphers of the country, railroad, commercial, press, and brokerage, than that of any other telegrapher of this or a bygone day, Professor Morse not excepted.

Dixie Service "Flops."

After exchanging news matter with the Associated Press for a time, the Southern Associated Press "flopped over" to the United Press. Mr. Morris's headquarters were then removed to Nashville, Tennessee, where he remained until the Southern Associated Press was absorbed by the United Press, which in time was taken over by the Associated Press. Mr. Morris is now, and has been for a number of years, the manager of the New York Bureau of the Boston *Globe*.

The United Press in the mean time had absorbed the New York Associated Press, and had entered into a close working agreement with the New England Associated Press, of which H. H. Fletcher, now editor-in-chief of the Boston *Transcript*, was the general manager.

In 1895 and 1896 the United Press was at the zenith of its glory, having succeeded in extending its leased-wire system to the Pacific coast and obtaining many clients which had been served by the Associated Press. The jurisdiction of Mr. Susesman was extended to the coast, and his son, A. L. Susesman, Jr., was made assistant general western manager.

The Chicago office itself was under the immediate charge of C. H. Johnson as day manager; Charles Matthias as assistant day manager; G. O. Perkins as night manager, and J. Herbert Smythe as assistant night manager.

Mr. Johnson is now a well-known manufacturer and dealer in electrical machinery and instruments in Chicago. After the United Press ceased to exist Mr. Matthias became the managing editor of the Chicago

Chronicle; he died at his desk about fifteen years ago.

Mr. Perkins, after the United Press went out of business, took a trip to Mexico for his health, and while there was tendered the post of superintendent of telegraph of the National Railway Lines of Mexico, which position he filled for a number of years.

His health fully restored, he returned to the United States about ten years ago to accept the position of superintendent of telegraph of the Chicago Great Western Railway—the "Gee Whiz"—which position he still holds. One of the crack operators in "HX" (Chicago) office at that time was Dave Grant, who is now a well-known musician of Denver, Colorado.

Old U. P. an Oprs' Concern.

The United Press was peculiarly an operators' concern. As mentioned above, all of the officers were operators who knew the game from the ground up, and every operator in the United Press employ took pride in the organization and strove with all his might to give the clients the best that there was in him.

However, the New York *Sun*, of which Charles A. Dana was the owner and editor, was not satisfied with the Associated Press service, and organized an independent press association of its own.

For many years previous to this the *Sun* had maintained a news service known as the Laffan Bureau, which served its clients by schedule. That is, a brief summary of many telegraph news items coming to the *Sun* from special correspondents, which might be of local interest, would be wired to the client, who would also be told the number of words in the story. If the client desired the item he would then wire an order for the number of words wanted.

"*Sun*" Organizes Its Own News Bureau.

The *Sun* used the Laffan Bureau for the nucleus of its new press association, leased a number of wires, and started an aggressive campaign against the Associated Press. This continued until the spring of 1916, when Frank A. Munsey purchased the *Sun*, and the paper's news association was abolished, the clients being turned over to another service.

About 1898 the Scripps-McRae League of Newspapers formed a press association of their own to serve afternoon papers only. This organization comprised the Cleveland *Press*, the Cincinnati *Post*, the St. Louis *Chronicle*, the Kansas City *World*, the Indianapolis *Sun*, the Detroit *News*, and the Chicago *Mail*.

The headquarters were in the offices of the Cleveland *Press;* a Mr. Wright was the general manager. J. J. Corrigan was the chief operator in immediate charge of the telegraphers for the whole system.

The concern was known as the Scripps-McRae Press Association. It soon obtained a large clientele, and the service furnished was noted for conciseness and aggression. Mr. Corrigan is still located at Cleveland, I believe, as chief operator for the new United Press, which absorbed the Scripps-McRae Press Association.

"Smiling Billy," Telegrapher-Politician.

An operator on the Indianapolis *Sun* was "Smiling Billy" Fogerty, who quit the telegraph service about twelve years ago to enter politics. He has been twice city clerk of Indianapolis, once chairman of the city Democratic committee, and I believe now is chairman of the Democratic county committee. Billy has been mentioned as a possible candidate of the party for the gubernatorial nomination. Smiling Billy was always very popular with the brass-pounders, and always welcomes one to his office, where he delights to bring up old times on the different press circuits.

At about the same time that the Scripps-McRae Press Association came into being, J. B. Shale, an editor of McKeesport, Pennsylvania, came to New York and organized the Publishers' Press Association, of which he was president and general manager. The Publishers' Press entered into a very close working agreement with the Scripps-McRae Press Association, exchanging news with it at Cleveland, Ohio.

By this agreement the Scripps-McRae was not to serve papers east of a line drawn from Erie, Pennsylvania, south. The Publishers' Press served evening

papers in the eastern zone and morning papers both east and west, besides a large number of Sunday morning papers, for which it had a special leased-wire fast-feature service.

Though Mr. Shale was not an operator himself, he personally employed all of his own operators as well as his agents and editors; and he used very good judgment in his selections.

Both the Scripps-McRae and the Publishers' Press did an ever increasing business for some years, until 1912-1913, when the two amalgamated as the United Press Association; under which name it is doing business to-day. The new United Press serves none but evening papers, and has a very large clientele.

In the New York office of the Associated Press shortly after the establishment of the leased-wire system, and when it had been whipped into good working order, was E. W. H. Cogsley, whom I have mentioned before. Mr. Cogsley was brought from Cincinnati. He took the newly created position of assistant superintendent of leased lines, having jurisdiction over all the lines and operators of the association east of Pittsburgh. Associated with him as night manager was Henry Rady, who for many years has been connected in an editorial capacity with the New York *Globe*. Charlie Morris and Horace G. Martin, too, after the absorption of the Southern Associated Press by the Associated Press came to New York and worked in the Associated Press office.

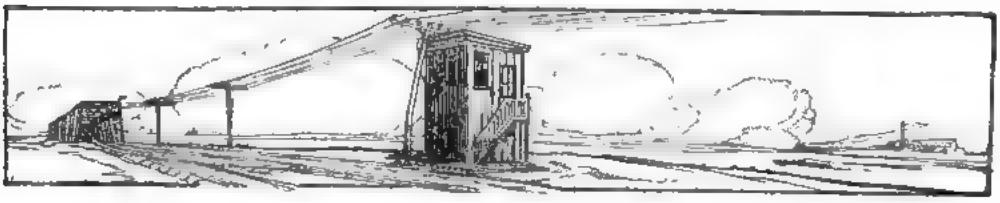
In the Louisville, Kentucky, office were two real old-timers—Frank A. Williams and "Jack" Huest. Mr. Williams, or "Fat," as he was called, passed away in Louisville some years ago, while filling the position of chief operator at that point, after more than forty years' continuous service for the Associated Press and its predecessors.

Mr. Huest, the last I knew of him several years ago, was still in the game at Birmingham, Alabama, working the day wire at that point. He was at that time about seventy-five years old. If he is living to-day I have no doubt he is not only the oldest man in point of service, but the oldest man active in the telegraph department of the Associated Press. The way he could make those old fingers of his fly over the keyboard of a typewriter was astonishing.

Besides the press associations which I have named, a number of small concerns sprang up from time to time, but most of them lasted but a short while and are now resting in the graveyard of buried hopes and perished dreams.

Among them might be mentioned the Dalzell Press Association, whose headquarters were in Baltimore, Maryland, about 1892. C. H. Watkins, afterward with the Scripps-McRae Publishers' Press Albany, New York, Bureau, was the superintendent. This concern had wire connections with only about ten newspapers. It gave a really excellent service while it lasted, but strong opposition forced it to the wall, and it suspended operations after a year of rather precarious existence.

The successes which have attended many of the men whom I have mentioned in the article but go to show that the telegraph, and especially the telegraph as applied to the newspapers, is an education in itself, broad and world-wide. If the telegrapher keeps his eyes and ears open and his mouth closed, his occupation oftentimes fits him for almost any position in public life. In other words, telegraphy is a splendid stepping-stone for useful and sometimes a brilliant career.



TRIPPING DOWN THE OLD MISSISSIP'.

BY RAYMOND S. SPEARS.

The Disappearance of Jerry Fander Stirs Up Excitement in Pittsburgh and Points South.

A SIX-PART STORY—PART SIX.

CHAPTER XXVI.

"PROTECTING SOCIETY."

"THE consummate audacity of the little pup, addressing us in such terms as those!" Faul gasped indignantly, when he had read for the second time that imperative, impertinent:

> Come across with that package.
> (Signed) JERRY.

"He's looking for trouble!"

Kulle tossed his head. "We'll have to give him a lesson regarding our real powers."

"Possibly he proposes to give us a lesson regarding his," Bough suggested meditatively.

"What— You think— Why, Bough—"

Bough gazed at the table without saying anything, while his two partners in many an enterprise looked to him for the word that would clarify the situation, which was growing more and more obscure.

Already Jerry's little scheme was making itself felt. Bough began to catch the significance of the affair. He looked up after a while and began:

"You remember when we became acquainted with J. M. Fander?" he asked almost casually.

"Would we ever forget?" Faul grimaced.

"He sort of drifted in on us, didn't he?" Bough queried as though he had doubts of his own memory.

"Drifted in—like a cannon shell six feet long!" Kulle declared.

"That was my memory of it," Bough approved. "He arrived with his fists doubled up, ready for war—but that was after a while. Now this boy of his—"

"An ignorant, hasty kid! What does he want of a hundred thousand? We have a right to know, according to law!" Kulle interrupted hotly.

"He is a prisoner of pirates, held for ransom," Bough smiled. "I think that, all things considered we had better call in Detective Shadder. These letters, telegrams, newspaper accounts are all coming from somewhere—Rosedale, this telegram, for instance. Also that *Copeland* news account. I think that the proper thing to do would be to communicate with Shadder. You know, Shadder is very shrewd—"

"When he isn't talking too much to the newspapers!" Faul shuddered

"Perhaps we'd better not blame Shadder for that unfortunate impression that Jerry was a fugitive from justice," Bough hinted. "He is very shrewd in his limited sphere. He should be here now—outside. Let me see!"

Bough called on the office phone, and a minute later Shadder entered, hat in hand, his face clearly showing the respect he had for these three men and their surroundings.

"Sit down, Shadder!" Bough suggested genially. "Now here's the situation: Jerry is a prisoner of pirates in the Arkansas swamps. He is sending interviews to the newspapers and messages to us. There are go-betweens—members of the piratical gang, you know—coming out into the open world; to Rosedale, to be specific, as you know.

"Now those scoundrels must be caught and punished. They must not get the idea that they can with impunity capture and hold the wealthy scions of great interests.

"You know what Carlyle said of the Royalists of France, as regards their dueling and facing revolutions and going to the wars, that they did dare to die, were men unafraid, and

for their own kind and in accordance with their own customs, they met death bravely? Well, just so; if we must do so, our people in this superior sphere must sometimes as individuals make the supreme sacrifice in the cause of their peers.

"Unhappily our own dear protégé, Jerry, is held for ransom. If the miscreants are unpunished, if they should obtain the ransom, they and their kind would unquestionably raid society, and no child would be safe.

"I fear, I very greatly fear, that no matter what happens to Jerry we must make war on the pirates. I am certain that Jerry himself, realizing the great principle now at stake and for the good of humanity, for the safety of society, would willingly, even gladly, make any and every sacrifice for this supreme cause."

"Yes, sir," Shadder approved.

"Then go after the pirates. Catch and hold those people at Rosedale and Arkansas City who are sending the messages to the newspapers and to us."

"Right away, sir! Yes, sir!" Shadder declared, rising. "Good day, gentlemen."

Within twenty minutes he had the sheriff in Rosedale on the long distance, and explained the situation to him. Half an hour later he learned that a "river rat" of the name of Hauky Rone had been picked up.

"He sent a message to your parties up theh this mo'nin'!" the sheriff declared. "But he won't talk, not 'thout givin' him the third."

"Well, just let it go for the present, but keep your eyes open. And say, can't you get in touch with Arkansas City, too?"

"Yassuh; theh's a good feller chief o' police down theh, suh."

"All right; I'm coming down myself, now that you've put things in motion. And we won't fail to make it worth your while!"

Thus Shadder had news for his clients, the executors of the Fander estate. It was grim news, and when Bough heard what had taken place, he found that he needed all his determination to hold himself together.

"It isn't murder! It is a sociological necessity!" he urged in his own heart. "We're not to blame. If we do obtain a personal advantage, it isn't right to deal with pirates.

"Suppose they do kill Jerry! He will die in a good cause! It would never do to let those scoundrels go with their booty. They would be holding all kinds of great people for ransom, if they once became possessed with that notion!"

Faul and Kulle were in no better state of mind. Bough told them what Shadder had done, and gave them the news that one of the pirate crew had been arrested. They well knew the probable effect of this news on the other members of the crew. The pirates would not hesitate to teach the people of society that they were desperate.

"We must catch the murderers! We must catch the murderers!" Kulle and Faul told each other.

The almost certainty that Jerry Fander was removed from their way did not greatly add to their satisfaction. It removed a complication, but it had also presented internal complications which they had not seen for all their foresight and experience.

This was their first venture of this kind True, men had died of worry, men had killed themselves, men had gone to the dogs, after warfare against them and their interests.

But they had never seen that these were any of their affair. The poverty and suffering of the enemy does not concern the victor, for such things are the consequence of waging war unsuccessfully.

If Bough suffered he did not display his feelings to his fellow executors and business partners. They left everything to him now. They had lost their nerve, as had happened on other occasions in critical moments, but Bough never did lose his nerve.

It was his blunt courage and daring that had enabled the strategy of all three to come to such great success, financially speaking.

It also relieved the consciences of Faul and Kulle to think that it was Bough who was responsible for the grim war against the captors of Jerry.

CHAPTER XXVII.

TAKING LUCK BY THE NECK.

THERE are worse places to sleep in this world than on a cotton mattress in the engine-pit of a semiopen launch, wrapped in a waterproof tarpaulin and plenty of blankets Fred Walts, the Pittsburgh reporter who had been assigned to interview Jerry Fander in the pirates' lair, enjoyed the sensation immensely as he settled down to the night in the falling dew of Arkansas Old Mouth swamps.

Against the dull sky he could see the misty branches of the trees which overhung the narrow waterway where the dark had compelled the tying-in of the pirates' semicruiser, which had no name, and rested upon the water's surface with murky colors that effectually hid it

against all glooms and most shores and waterway banks.

As he thought of it he was in an incredible position, undergoing an impossible adventure in an unimaginable country. His dream had been that some time he would be able to venture into wild places, find unseen things, become a traveler and explorer.

Now the unhoped-for had come to him strictly in the matter of his work as a newspaperman, just because he had kept track of the workings of a financial clique away up yonder in most extraordinary Pittsburgh!

Just so is the impossible accomplished for the ready and the true. He had tried to deserve the right to go far and see much, and now he was doing more than that; he was taking part in a kind of drama, telling about it for his paper as he went along. Poor and hard-working, not well paid, he was doing what he wanted to do at the expense of others who would lose nothing by their selection of him for the work in hand.

Awake, Walts had his delightful realizations, and when he drifted across from wakefulness into sleepy land, and then to sleep, there was not a break in the sensations of satisfaction and gratitude over the fact that his opportunity had arrived and found him ready to seize it. He could hardly believe that his clippings, his reports, his books had enabled him to do what he was doing. Yet he knew that his preparedness was what placed him in the most enviable position of any Pittsburgh reporter.

Life, he thought, or dreamed, was all romance. Jerry Fander was living a romance; Tressy Wooten was living one; the poor little pirates were living one; he himself was living a "story."

He was awakened by a dash of water and a merry laugh.

"Wake up, yo' lazy bones!" Tressy Wooten told him. "Listen to the ducks quack an' the wild turkeys gobbling and flying down from their roosts! Hear the fish a jumpin'! Wake up, yo' lazy bones!"

He started up, and found that Tressy had thrown a cup of water on his face. While she laughed at him, he wiped the water out of his eyes and looked around.

The sun's level rays out of the east were sweeping westward through the fine branches and twigs of the tree-tops, and every twig was white, glistening with frost. The air was full of tang. Slivers of ice were along the edges of the partly-sunken logs, and jutting out from the shore, or floating clear with a leaf or twig for nucleus.

All the sounds that Tressy had mentioned were in the air, and more, too. Squirrels were barking, and romping from tree to tree, making the branches swish. Small birds were piping around. Snipe were whistling. All the world was alive and quivering.

It was a perfect autumnal morning. Tressy was already at work, starting breakfast. By the time he had spread his blankets on the cabin roof and shaken himself together, the smell of coffee and frying sausage was in the air.

A few minutes later they had put up a folding dressmaker's table, which the pirates had picked up somewhere, and were sitting down to a smoking breakfast in the sunshine, which was by this time falling into the depths of the woods as well as skipping through the tree-tops.

In half an hour while she washed the dishes and put them away he started the motor, and steered westward, searching for the Old Bend Lake. The lake was only about two miles distant, and they saw it before they reached it, across a very low neck of old mudbar or old sandbar, grown to huge trees, but with hardly any underbrush. Running out into the lake, they took a straight course for the little bay, where they soon could see the Wooten cabin-boat.

They could see also that another boat was moored there. As they approached nearer Tressy recognized the stranger.,

"Why, they's the Fairy Land—hit's Fander's bo't! What do yo' make of that?"

Blue smoke was pouring from the stove-pipe of the Wooten boat. That proved that some one was on it. Tressy impatiently urged greater speed, so Walts turned on the gas, and, as the motor grew warm, turned off the air. The semicruiser lifted and darted ahead at a rate which soon carried them into the bay, and then alongside the Fairy Land, with the reverse boiling the water under the stern.

Fander came out to greet them, followed by the two pirates.

"Where's your mother?" Fander asked. "Where've you two been, anyhow?"

Walts grinned uncomfortably, but Tressy spoke to the point.

"I went aboard your bo't an' seen yo' chained to yo' bunk. I legged hit, an' was lost into the Dark Corner. This feller an' me met oveh by the haid of the lake—in the old channel; yo' fellers know!"

"Into the bare place?"

"Yassuh. We started heah last night, soon's we could, but hit were too dark, so we tied

in to the narrows theh, an' I marched him out into the engine-pit, an' this mornin' we came through yeah. But maw—where's she?"

"That was what I was asking. We found the boat here, and were cooking breakfast on her stove; we're short of kerosene for our cook-stove."

"Maw gone!" Tressy turned and looked across the lake.

"Had your breakfast?" Fander asked Walts.

"Yes—she's in Tressy's launch," Walts responded. "I left her over in those islands when we came out of the bayou, after finding Tressy's boat where the wind blew it up and around the bend—"

"What kind of a tie do yo' make to yo' bo't?" Delp asked the girl.

"Sho! I had a loose noose—"

"And yo' be'n on the riveh all yo' borned days!" Delp grinned.

"She went south," Walts continued, "looking for Tressy here. That was the last I saw of her."

"Well, we'll go over along the aidge," Delp suggested, "soon's we've had sunthin' to eat She's the on'y one that's turned up lost now!"

They were eating in the cabin of the Wooten boat, which the pirates had entered with a skeleton key, Tressy and Walts drinking a cup of coffee for company's sake, when Tressy cried:

"Theh she comes! Theh she is!"

Sure enough, Mrs. Wooten was coming across that lake from directly opposite, having run out of one of the bayous there. Long before she arrived at the boats, she recognized Tressy standing on the roof of their cabin-boat.

"'Peahs like yo's got a heap of men comp'ny fo' a lil gal!" she sniffed, as she drew alongside. "I be'n rearin' an' tearin' 'round through forty mile of bayous an' old riveh's, an' hyar yo' be with, le's see—one, two—fo' fellers! Dadgasted gals! Men won't stay away from 'em, nohow!"

The men all laughed, and Tressy blushed around her freckles.

Mrs. Wooten hungrily ate her fried squirrels and turkey, hot bread and souse—gravy.

"Where'd yo' sleep last night, mother?" Tressy demanded.

"Back in theh—I won't tell who 'twas, but yo' ought to hearn 'em tookin' on! Yestehd'y mornin' somebody shot their two dawgs, an' ho, law! If that old man an' hisns wife didn't give 'em down the banks an' oveh the shoulder! Hue-e! He 'lowed he'd jes' natchely shoot who hit was, an' all hisns women folks. I neveh hearn such good cussin' an' blastin' in all my born days!"

"Two big mongrel bloodhounds?" Tressy asked casually.

"Sho! Gal! Yo'! My lan'! Wa'n't I lucky he didn't know who done hit! But yo' was an awful way from home in that brake!"

"I thought so, too, mother," Tressy answered with a little frown, then, turning to Fander, she demanded: "I 'lowed yo' was daid, theh on the bunk!"

"Oh, no—not at all. You see, I tripped over a cleat and it knocked me out. Of course the boys broke away then, and caught me up again. But we made friends, and now we're pals."

"Then it's spoiled my story for me!" Walts exclaimed ruefully. "I had you all caught up and a prisoner again!"

"Write it just that way, and then send in another story when we find out what happens next," Fander urged. "Won't you, old man? I don't want them to know that I remained free, but I want them to think that I was caught again—just as I was."

"It's your story—and I know that Pittsburgh bunch," Walts agreed doubtfully. "Stories break different here, some way."

Immediately he began to write the story of the recapture of Jerry by the two pirates—and he had all the details of Jerry's unfortunate "accident," and how the pirates took advantage of it to pick his pocket and set themselves free. The end of the story was where Walts found the girl in the Ozark New Bend, and heard her version of the affair.

Delp offered to take it to Rosedale, and away he went that afternoon to telegraph it. Thus when it arrived in Pittsburgh it was printed the morning after the story telling of Jerry's captivity and escape, which had taken nearly three days to go by mail.

Delp returned a few hours later, and the company had a feast beside the lake—venison and other game, supplies from the Fairy Land, all thrown together by the master river cooks, Delp, Mildy, and Mrs. Wooten.

Tressy, Fander, and Walts were driven out of the way, and took refuge in the Fairy Land.

"Yo' fellers is lying!" she addressed Fander with frankness. "If yo' ain't, how come hit yo was hit under the ear, an' yo' ear wa'n't busted er split?"

Fander twisted uneasily; then he said:

"It's like this. Delp, Mildy and I are good friends now; you understand? All there is to it, we didn't trust one another at first. But we came to an understanding—"

"Yo' trust them riveh rats!" Tressy exclaimed. "Yo's the first feller eveh did that when yo' knowed 'em!"

"That's exactly it; that's just what they said, when we talked it over. No one ever trusted them—played fair with them. But I'm going to do it. They did me a favor as big as a house—yes, as large as the Mississippi!"

"So they turned yo' loose?" Tressy asked.

"Yes."

"Wonder they didn't cut yo' throat instead!" Tressy commented.

"That's true, too; but our luck broke right, this time," he smiled.

They feasted and told stories late that night. Then, in the morning, Delp carried another telegram over to Rosedale, this one from Jerry to his executors, which read:

Come across with that package.

JERRY.

"You see how it is," Jerry explained, for they all knew the story of the Fander estate by this time. "I've been picking up a good deal about that Swamp, Delta and Bayou Railroad—Delp and Mildy both worked on it for a little while—playing cards mostly; wasn't it, boys? What they told me, what you had in your articles and tell me now, Walts, and what I remember make me pretty suspicious. Anyhow, I'm sick of running around in a leash, the way they've kept me. I'm going in to take a look at the financial end of this Fander estate. I want to go to work, instead of being a play-boy!"

"Will that work out?" Walts asked. "Do you think they'll come across, or will you have to fight?"

"I hope they'll fight!" Jerry exclaimed. "The old whelps!"

They waited for the return of Delp, but he did not return. That night Mildy was almost crying for fear something had happened.

Fander, too, was nervous. He did not know just what he ought to do. He decided to have Walts go and investigate when morning arrived without the return of the absent messenger-pirate.

Walts went then, Mildy going as far as the shanty-boat town at Arkansas Old Mouth in order to bring back the launch in which Walts had tripped down from Helena.

Mildy returned, but Walts did not. Fander, Mrs. Wooten, Tressy, and Mildy sat up late, waiting for Walts. In the morning Mrs. Wooten and Tressy went, for Fander did not want it to be known that he was free till he had heard from Pittsburgh.

"We'll come back er bust!" Mrs. Wooten declared. "We'll scout aroun' an' find out. Yassuh!"

"What do you think is the matter?" Fander asked Mildy.

"I don't know, suh! Lawse! I bet luck's broke ag'in' me 'n' Dan agin!" Mildy began to whimper.

"We'll take Luck by the neck and choke the cuss!" Fander assured him cheerily. "I've a suspicion that Luck's breaking our way now!"

"Lawse! I hope so, suh!" the pirate choked. "I be'n waitin' fo'ty years, an' hit neveh did yit!"

CHAPTER XXVIII.

TALLMUTT PUTS ONE OVER.

THE day following the trustees' decision to let Jerry die, the three had an opportunity to smile. The sheriff at Rosedale reported to Bough direct that he had caught a man of the name of Fred Walts, who claimed to be a newspaperman.

"He's demanded the right to telegraph to the newspaper *Copeland*," the sheriff reported, "but it ain't went yet."

"What does it say?" Bough asked.

"I'll read it. Here 'tis: 'Arrested without cause or warrant by sheriff at Rosedale, and locked in jail. Please take steps in this matter. Fred Walts'"

"Well, I wouldn't send that message," Bough suggested judicially. "What about Jerry Fander?"

"Neither one says a word. They won't talk."

"Well, keep it as quiet as you can. Any idea where Fander is?"

"They've got him over in Arkansas Old Mouth Dark Corner."

"Walts in with the gang?"

"Why, yes, he must be! He came around to the telegraph to ask for this man Hauky Rone we arrested yesterday. Only he called him Dan Delp. We're looking up Delp's record. He's an old river pirate—bad man."

"All right. Do you suppose they'll hurt Jerry—their prisoner?"

"Well, I'm afraid so. You see, they're desperate. Delp, or Rone, whatever his name is, always traveled with bad men. He's desperate; he's mean clear through. There's lots like him."

"Well, do your duty, officer! Society must be protected, at whatever cost. We expect you to hang the men who murder Jerry Fander, if they do!"

"Yes, sir. We can kind of compromise with them, an' perhaps save that young feller. We got the both of them now. We might kind of let one go, you know, or both. Them riveh fellers is faithful an' sticks together."

"No, sir. We don't want any compromise, and if Jerry is killed we'll pay ten thousand dollars reward to see his murderers hung."

"Yes, sir. If they wa'n't so much compromisin' with crooks they'd git mighty scurce d'rectly, suh."

"We do not propose to compromise," Bough answered with cold determination.

"We got them fellers. If we knowed Jerry Fander was daid these fellers would be took kyar of anyhow."

"Oh, no! Let everything be legal," Bough expostulated. "Walts, you know, is a newspaper reporter—one of those smart ones; but needs a lesson."

"Yassuh; an' some of them's overly smart an' horse-talkin'!"

"Thank you, sheriff, for letting me know. Keep me posted, won't you?"

"Suttin'ly, suh!"

"Good-by."

"Good day, suh."

Bough turned away with a smile.

"It 'll do that Walts good to be locked up a while. That's a good joke. I'll have to tell Faul and Kulle."

This he did immediately, going to their offices and telling the news.

"While he is wriggling out of this little fix he is in we will not be annoyed by further publicity," Bough bragged in his own quiet way, but adding with his customary precision and caution, "at least not from his direction."

In his bragging he was a little mistaken; the telephone-wires over which he conversed passed through several centrals. One of the centrals was on intimate terms with the telephone switch in the office of the *Copeland*. She happened to cut in on the Rosedale sheriff and Bough as they conversed.

Ten minutes later the telephone switch in the *Copeland* office learned from his friend what had been said. In two minutes, the city editor of the *Copeland* was informed of the matter. After ten minutes' consultation with the editor and business manager, the city editor sent Tallmutt, the financial reporter, to the office of Mr. Bough.

Tallmutt was the only reporter on the *Copeland* certain of an interview with Bough upon demand. Also he was a loyal newspaperman.

"How are you?" Bough greeted with a little quiver of his lips, the sign which gives so many reporters so great an advantage in their interviews.

"First rate, Mr. Bough," Tallmutt answered. "They understand over at the office of the *Copeland* that you have caused the arrest and imprisonment of Fred Walts, the reporter who was sent down the Mississippi in search of your protégé, Jerry Fander. They want to know what for."

"Why—what—I—"

Bough started to his feet, and stood shaking by his chair, to which he clung for support.

"How about it?" Tallmutt demanded, for if reporters weren't safe, he wasn't.

"I am surprised—I do not understand—I—I have not ordered his arrest! I did not say—"

"Look here. Have you any evidence that he is a river pirate or that he is connected with the kidnaping of Jerry Fander?"

"No—no—not at all, Mr. Tallmutt. It was—I believe it was—the—the sheriff. He has—"

"Why has Fred Walts been prevented from communicating with the office so that his rights may be guaranteed, Mr. Bough?" Tallmutt pressed.

"But—I—how do I know? What do you mean, talking to me in my office in this—"

"Cut out that talk, Bough. What do you want to get rid of Jerry Fander for? Why are you letting river pirates kill him? Hurry up now, Mr. Bough. We want to get out a special edition—an afternoon edition, you know—for this is good news—rattling good news! What have you to say for yourself, Mr. Bough?"

"Oh! Oh!" Bough staggered back and fell sidewise into a broad, fat office armchair.

"Now we want to hear from Fred Walts within thirty minutes, Mr. Bough," Tallmutt stated with distinctness. "Good day, sir!"

CHAPTER XXIX.

"GEM'MEN HATES TO BE LOCKED UP!"

DAN DELP carried the message over to Rosedale and filed it in the telegraph-office. Then he went over to a barber-shop to have a shave. Afterward he went to the hotel after his dinner. He had left the hotel, on his way to the landing where his gasoline semicruiser was, when a portly man with a

blue suit and pyramidal countenance, accompanied by a slim, thin-featured man, came alongside in an automobile. Before Dan knew what had happened he was covered by three revolvers and a pair of nickle-plated handcuffs were on his wrists.

"Kidnapin's bad business," the portly man suggested. "Git in yeah!"

Delp, stunned and with such feelings as may be imagined, found himself yanked into the automobile and hurried to the jail. There he was thrust into a den with a steel ceiling and floor, brick and cement sides, an 8x8-inch window and a door like an icebox.

A few minutes later he was visited by the portly man and the other captor, who threw the little fellow into the corner roughly, so that they could sit on the steel and canvas bunk.

"Who are yo'? What's yo' name?" the big fellow demanded.

"Hauky Rone," Delp answered promptly.

"River rat?"

"I'm off the riveh, suh."

"Where's Jerry Fander?"

"Neveh hearn tell o' him, suh."

"You lie, an' yo' talk up now! Where is he?"

"I don't know, suh."

"What! An' yo' sent this message?"

"Yassuh. I sent hit."

"Where was Jerry Fander when he gave it to yo'?"

"I don' b'lieve he give hit to me, suh."

"What! Who did give it to yo' then?"

"Feller up to Half Moon Lake, suh."

"Half Moon Lake? Above Montgomery Chute?"

"Yassuh."

"He come out the lake?"

"I didn't notice, suh."

"What were yo' doin'?"

"Comin' down, suh. Two spo'ts hired my bo't, suh, an' I took 'em up from down b'low Arkansas City, suh. Comin' down, feller—big feller with blue eyes an' red hair; mean scoundrel, suh—'lowed I should take that message to Rosedale, er anywheres, an' send hit, suh He give me a five-spot, suh, an' I took hit."

"Yo' lie like yo' meant hit," the sheriff commented.

"I ain't lyin', suh."

The two officials sat staring at the prisoner, who stood in the corner, staring back with blank, winkless eyes.

"Yo' riveh scoundrels lie as easy as grease slips!" the sheriff remarked scornfully. "Yo' betteh come across with the truth"

"I done said hit, suh. I'm hones'—"

"Yo' look hones', yo' do! I neveh saw a little scoundrel like yo' that would'nt steal chickens er draw the skin on a hog's throat."

The prisoner made no reply. The two men filed out of the cell and pulled the door to after them. Delp went over to the bunk and sat down on it.

"We'd ought to have cut that feller's throat, an' gone down Chafelli, the way Mildy wanted to!" he muttered. "I bet I won't make no mistake like that agin. Luck's broke bad, like hit always has. Them spo'ts always lies er double-crosses a feller.

"I don't know how he done hit, but I bet hit was them telegraphs. Hit were secret pateran, yassuh; an' we tumbled fo' hit, me 'n' Mildy. Next they'll send Mildy, an' then up we go—twenty yeahs. I'd orter hang myse'f! I ain't neveh had no luck. I mout betteh be daid 'an workin' roads er in the mines, er on the levees."

That evening the jailer brought him supper. In the morning came breakfast, then dinner, then supper. At supper-time the jailer spoke.

"We took anotheh one of yo' gang. We got Walts, that slick, white-collar, all-front feller!"

"Yo' got him?" Delp asked listlessly.

"Yes, an' we'll have the rest of the gang, too, d'rectly. If Jerry Fander's daid, yo'll git hung the next night; yo' will, yassuh."

"I don't kyar," Delp replied.

"We know who yo' be, too, white man! Yo's Dan Delp—"

"I'm Hauky Rone, suh."

"Yo's Dan Delp, an' they's gittin' yo' record from St. Louis an' Pittsburgh to the Passes, too."

"Hit 'll make int'rustin' hist'ries," the prisoner commented.

"Say, old boy"—the jailer grew confidential—"give hit to me straight, won't yo'? Who's that feller Fred Walts? He's got friends in Pittsburgh, he has, an' the gov'ner of the State's asted about him, an' the sheriff, he's scairt an' like a feller that's got a bull by the tail. He hates to hang on, an' he's skeered to let go."

"If he's got sense he'll let go about ten o'clock to-night of the both of us," Delp suggested. "He'd betteh let somebody else pick up this yeah hot blue-steel; yassuh"

"Yo' Walts has friends; yassuh!"

"Yassuh, this yeah's politics. Yo' know what politics is."

"Sho! Yassuh—I know. Yo' know, I's be'n friendly. I treated yo' white, ain't I? I

give yo' good grub to eat, didn't I?" said the jailer, almost meekly.

"Hit's bein' locked up that's insultin'!" Delp grunted.

"Yassuh, a gem'man shore hates to be locked up!"

"'Specially 'count of some of them grafters."

"I'm goin' to tell the sheriff, suh."

"If yo' don't somebody will; yassuh. I'd git theh fust—"

"Yassuh."

The jailer retreated. He returned a little while afterward.

"Hit's all right. I told the sheriff, an' round ten o'clock like's not yo' 'n' yo' friend 'll find yo's got friends right yeah in Rosedale. Don't yo' forget that, suh. Yo' won't? Hit's jes' a favo' to yo', yo' know. We all don't want to git muxed up in no politics."

"I ain't so overly puticular," Dan replied nonchalantly, clasping his hands across his knee. "'Course, gem'men hates to be locked up!"

"Yassuh! I understand. Take hit when a man's done meanness er got into a difficulty hit gravels on to 'em to git locked up. About ten o'clock, suh."

"Well, all right. All the same to me tonight."

Walts, following Delp, and seeking information about the missing messenger, had gone first to the telegraph-office, and when he asked if Delp had been there with a message the day before, a tall, slim man covered him with a revolver.

"Hands up, yo' dad-blasted pirate!" the slim man growled heroically.

"Eh, what!"

"Hands up! Kyarful, an' don't make no motions! Where's yo' gun?"

"I don't carry any."

"That's a lie! Search him, Sam!"

Sam, a yellow man, went through Walts's clothes, but found no firearm, and nothing larger than a knife.

"Look here, what does this mean?" Walts demanded.

"Come on!" the captor ordered, pulling him along by the collar.

Walts, with handcuffs on, had to go up the street, with a crowd of white boys at his heels and a crowd of black and yellow boys at their heels. He was taken into a jail and thrust into a cell.

A little later he was visited by a pompous, goateed man who said:

"I'm the sheriff, white man. Now where've yo' got Jerry Fander locked up?"

"What!"

"Oh, we know you're one of that gang of pirates, even if yo' have a white collar an' tan shoes. Come out with it, er yo'll git beat up!"

"I want to send a message," Walts demanded immediately. "Also I want a lawyer."

"Theh's lots of time to git lawyers an' send messages when yo's answered questions. Where's Jerry Fander?"

"Just put down that the prisoner refused to answer any questions, that he demanded his right of having counsel, and that he demanded to know why he was arrested," Walts answered smiling.

"Yo' talk purty high-flyin', suh! I've a good notion to hit yo' fo' luck, an' because yo's impedent; yassuh."

"If you did that luck would probably break against you," Walts suggested. "Here's a message I wish you would send. I'm not going to answer any questions."

Something in the prisoner's bearing went through and the sheriff and his deputy left the cell. Walts was visited by the jailer at noon with the dinner.

"The sheriff 'lows he'll skin yo' alive if yo' ain't mo' keerful the way yo' talk," the jailer suggested. "He'll hang yo' up by the thumbs."

"I wouldn't if I were he," Walts suggested. "You see, that kind of thing doesn't go these days. Besides, he is liable to make a mistake."

"How so?"

"My friends wouldn't care to see me tortured, you know; and besides I was arrested without being charged with any crime, nor any warrant read to me, while I was in pursuit of my own affairs."

"Yassuh. But kidnapers ain't much rights; no, suh."

"Oh, yes, they have. But of course people who are not kidnapers, who are arrested and injured, have redress in the courts. I mean suits for damages, for example. I don't live in this State, and I have proper recourse to the Federal courts, you know."

"Yassuh."

That afternoon the sheriff himself returned.

"Say," he fairly begged, "I—I ain't no hawd feelin's to'd yo', suh. I—we jes' do ouh duty down yeah. Is yo' Fred Walts really?"

"I am."

"Well, suh, I—they said to Pittsburgh that

I should hold yo', an' the gov'nor, he telephones an' asts what the —— we got yo' fo'? Yo' see how things is.

"I'm jes' doin' my duty, suh. I ain't no hawd feelin's, suh. I treated yo' all right, ain't I? I done all right, an' give yo' good treatment; didn't I?"

"You didn't tell me what I was arrested for, nor permit me to have counsel," Walts reminded him

"Yo' didn't need no friends, suh. Theh's seven newspapers telephoned in an' asted what yo's arrested fo', suh. Dad blast me! I ain't got no wish to mix up into them big politics. I jes' 'lowed hit were jes' a kidnapin', an' hyar the gov'nor an' all the newspapers is afteh me, 'cause I got two dangwhanged river rats locked up!"

"I'm not a river rat," remonstrated Walts.

"No, suh. Hit was two other fellers. I didn't mean yo', suh. Say, I don't mean no harm, suh, but if yo'll jes git back into yo' motor-bo't, suh, an' git to hades out'n heah, I'll see yo' get a chanst."

"Oh, no. I prefer to stay here, and find out what it means."

"Well, anyhow this ain't no place fo' a gem'men, suh. Yo'd betteh go with a feller to the hotel, suh. I got a dep'ty. He'll take yo' to the hotel, suh."

"Still in custody?"

"No, suh, unless—"

"Well, I want to know what it means. Tell me straight, sheriff, and it may let you out of a bad hole. I'm Fred Walts, a newspaperman, and have been arrested under such conditions as entitles me to damages."

"Yassuh. I'll tell yo', suh. Hit were a feller name of Shadder told me fustest. He said git anybody fetched in messages from Jerry Fander.

"We ketched a little feller, said his name was Hauky Rone, but he's Dan Delp, too. We know that. We telephoned Shadder we had 'im, an' he said hold him, an' anybody else. He'd be comin' down.

"Then he said I should call up feller name of Bough, 4-L-4 Confidential, to Pittsburgh, an' when we got yo' I done hit, an' he told me to hold yo'. I don't know him! He's no 'count anyhow. He 'lowed we should git the fellers that kidnaped Jerry Fander, an' hang anybody that killed him.

"Said he'd give ten thousand dollars if the fellers that killed Jerry was hung. Said they owed hit to sassiety to refuse to pay blackmail, an' so on, an' 'lowed to let Jerry git killed. When I told him about yo', he said hit 'd be good idea to hold yo', an' keep yo' inside, an' not send that message, so I didn't. I'm tellin' yo' straight.

"But I sent hit aftehwards; yassuh! Lawd! Hit wa'n't two hours, an' the gov'nor an' newspapers an' all kinds was astin' about yo'; yassuh. An' that feller Bough, he neveh answered my telephone, an' I don't give a whoop no mo'. If yo'll jes' cl'ar out—yo' an' that other feller—yo' see—"

"I see. I'll think about it," Walts answered, puzzled. "You've told me what I wanted to know."

"Then yo'll cl'ar out?" the sheriff asked hopefully. "Yo' see, I ain't no wish to mux up in big politics, suh. I'm satisfied. This yeah job's all right, but hit's powerful wearin' on the nerves; yassuh.

"I ain't 'fraid of no gun-fighter er desperado er hold-up; no, suh! I ketched that kind with my bare hands. But them big fellers! Little fellers like me ain't no 'count when they falls out. Yo' see how hit is. I ain't no call to mux up with yo' kind of politics, suh."

"I see. I think I'll go to the hotel," Walts agreed. "I want to get my bearings"

"Yassuh; I'm sorry, suh. If I'd knowed I'd let the whole caboodle go. Yo' neveh know, takin' up yo' river fellers, what kind of a handful yo' is goin' to git. I 'rested an ornery little red-haired feller wunst, an' next I knew me 'n' the jailer an' my under-sheriff was locked up, an' that feller helt up the club, an' took fo' thousand dollars, right along, two-hands runnin', yo' mout say. We jes' gotter treat river fellers rough er we don't know what 'll happen."

The sheriff let Walts out of his cell, led him to the hotel, and sent a deputy after his typewriter on the boat at the landing. That night the jailer brought Dan Delp to him.

"Yassuh!" the jailer apologized. "Mistakes will happen, suh. We don't aim to mix up in no big politics; no, suh, not us!"

CHAPTER XXX.

"NO HARD, MEAN FEELIN'S HEAH, SUH!"

MRS. WOOTEN and Tressy came to Rosedale in Walts's launch. Mrs. Wooten did not go to the telegraph-office to make inquiries. Instead, she went to a drug-store to purchase some powdered alum, which she needed to sprinkle on blue hides to set the hair.

"Trappin' ain't so overly bad this yeah,"

she told the druggist in a conversational way. "Riveh folks ain't much to complain of with furs bringin' what they is, and real plenty."

"Where are yo' trappin'?"

"Round Arkansas Old Mouth."

"Big Island, eh? By the way, yo' haven't seen a feller name of Jerry Fander, have yo', into a big stern-wheel motor-boat? He got kidnaped."

"Kidnaped! Fo' land sakes! What won't them pirates do nex'! Who done hit?"

"They don't know. They locked two fellers up heah. They come in yeah, the fust one to send a telegram, an' they nabbed him; an' then anotheh feller, one of them white-collar riveh rats. Yo' know them kind!"

"Yassuh! Good front an' kind of sassy!"

"Well, they locked 'em up; but, ho law! Sheriff Bofel hadn't no more'n locked 'em in an theh began to climb into hisns neck. Hue-e! The gov'nor, he telegraphed, an' the Vicksburg *Sent'nel*, an' the Memphis *Battle-Ax*, an' Helena *Half-Seas*, an' the Reelfoot *Home Love*—ho, law! They got the sheriff, an' the sheriff seen he'd put hisns foot into hit, an' he tried to let 'em go, but that feller Walts, he wouldn't go, but he jes' sets theh into the hotel, poundin' away on to a typewriter, writin' stories—ho, law!

"An' that little riveh rat, he totes them messages to'd the telegraph. They ain't be'n so much excitement byar in Rosedale sence the last time the ice tore the Klondike loose, an' leadin' citizens was carried down old Mississip' into the whisky-bo't! Hue-e! Ain't hit amoosin'!"

"Yassuh, hit's plumb amoosin'!" Mrs. Wooten agreed. "All that hubbub an' 'citement oveh two-three riveh rats! Shucks! Folks up the bank is awful short o' int'rustin' things when they gits warmed up oveh them trash an' no-'counts!"

The druggist blinked, and when he had recovered his equipoise, he found that his customers had departed. He went quickly to the door to see them go. Both Mrs. Wooten and Tressy carried their heads high as they quick-stepped along the sidewalks, which were on trestles to lift them higher than a seep-water overflow.

They went to the hotel, said at the desk that they wanted dinner and then turned to go to the ladies' parlor. But as they turned, Dan Delp appeared from up-stairs.

"Sho!" he grinned.

"Shucks!" Mrs. Wooten sniffed. "Low-down riveh white trash!"

"Hit's seo!" Delp grinned. "Ho, law! Walts is shore writin' hist'ries! They had us cooped up, but the gov'nor an' Pres'dent an' them big fellers hearn I was in jail, an' they let out an awful holler, reg'lar old wolf yowl, an' sincet then the sheriff 'pologizes every time he meets me on the street. I yain't no call to be po'r white riveh trash no mo', but hit's plumb honorable down yeah now, so I'm jes' like yo' said.

"But I got a piece o' message to take, an' I'll come back. Fred's up in No. 33, an' he'll shore upsot hisns chair to see yo'!"

Mrs. Wooten went up to the room No. 33. Walts was there, tearing up the alinement of his typewriter's keys; but he stopped with a grin and greeting of joy.

"You're next, eh? Did they arrest you yet?"

"No, suh, they didn't. I let on I was jes' a trapper lady, an' 'at po'r white riveh trash wa'n't none of my business, suh. They 'lowed they'd picked up a riveh pirate, an' one of them white-collar 'lectric-belt fellers, an put 'em in the icebox—"

"Oh, say—hold on! Let me get that, will you! Let me see—white collar, electric-belt fellows—"

"That's hit!"

"I've been called lots of things, but that's dandy! Oh, how soon can we get Jerry over here? I've messages for him—lots of them!"

"I'll take them!" Tressy offered promptly.

"All right—will you? I'd be a thousand times obliged! Here they are—this stack! Luck's broken for him all right."

Tressy took the twelve or fifteen telegraph blanks, and hurried away with them. As she ran down-stairs Mrs. Wooten looked after her doubtfully.

"I don't know if I'd betteh let her go alone. She ain't had much 'sperience with men."

"I think she'll take care of herself."

"But that Fander—"

"He'll have enough to think about, reading those messages. Besides, he's no sport, you know."

"I ain't so overly sure of that, suh. But, shucks! I ain't goin' to worry none; when I was her age—hue-e!"

Tressy hurried to the river, took the pirates' semicruiser, which was the swifter boat, and drove at nearly full speed for Arkansas Old Mouth, through Duckhunter Bayou to the Fairy Land, where she gave the messages to Jerry Fander. He glanced at the first one, and gasped; the second one made him whistle, the third made him thoughtful.

"Here!" he said with the fourth, handing it to Mildy. "You're interested in this one!"

Mildy, glum and downcast in spirit, took the yellow slip and spelled out the words, one by one.

"Lemme he'p yo'!" Tressy exclaimed. "My eyes may be betteh!"

"Yas'um. My eyes is wind-blown!"

Tressy read:

"JERRY FANDER, Rosedale
"Large packet sent this morning
"KULLE"

"Large package," Mildy repeated

"That means you and Dan are fixed for life," Jerry smiled.

"What—what!" Mildy gasped, staggering back, tears filling his eyes. "Yo' mean hit! Yo' keeps yo' word with us—us no-'counts?"

"My word is better than gold, Chub," Jerry assured him. "I've come into my own, thanks to you—and it is the Fander tradition that any man who has been willingly or accidentally a factor in our prosperity or success is never forgotten!"

"An'—an' I ain't got to be a thief no mo'—an' I ain't got to be a thief er steal hawgs, less'n I want excitement!"

Mildy tried to hold himself together, but he choked and turned away, sobbing:

"An' luck's broke ouh way, me 'n' Dan's way! Ho, law!"

Jerry and Tressy watched the poor little river rat stumble blindly into the cabin of the Fairy Land, there to try to compose himself to the good fortune that broke his way at last.

"Them kind on the riveh is hongry one day an' hog-fat the nex'," Tressy remarked quite calmly.

"Yes, that's so."

"We'd betteh be pullin' fo' Rosedale Walts said we should."

"All right. Hey, Mildy! Let's pull out for Rosedale!"

"Yassuh! Yassuh! Yo' go. But them fellers 'll hook me up'"

"No, they won't!" Tressy told him. 'I seen the sheriff take off his hat to Dan—"

"What! Took off his hat to Dan Delp—a sheriff! Holy Mississip'!"

"The world is upside-down to-day!" Jerry laughed.

"Yassuh. Hit mus' be! Ho, law!"

They lashed the Wooten cabin-boat stern to the bow of the Fairy Land, and Tressy navigated the semicruiser. They steered through Duckhunter Bayou into Arkansas River and down through the Old Mouth into the Mississippi. Then they went up to Rosedale, where they arrived just before dark.

Mrs. Wooten, Walts, and Delp were on the bank at the landing. With them were several men, and one large, portly man with white goatee and mustache. He looked his part of sheriff. When Mildy jumped ashore with the line, the sheriff took off his hat in a bow.

"Mr. Mildy, suh! I yearn of yo' good fortune, Mr. Mildy. They ain' no hawd, mean feelin's nowhere, suh. No, suh! Yo' friends heah—an' Mr. Fander! Mr. Jerry Fander, I congratulate yo', suh!

"Yo' have been very fortunate in yo' riveh friends, suh. Mrs. Wooten, suh, is a lady, an'—ah! Her daughter! Sho!

"An' this yeah is Tressy Wooten! Yassuh! She preserves the Southern tradition of ladies, suh!"

"Shucks!" Tressy laughed in his face "Me all freckled an' less fat'n a weasel's got! Southern beauty! Shucks!"

"I was referrin' to yo' charmin' wit an' yo' courage!" he retorted, and the laugh that followed was more than friendly.

"Why, hello, Shadder!" Fander exclaimed, recognizing the Pittsburgh detective, who was standing uneasily in the background

"Hello, Mr. Fander! And you're all right! Yes, you're all there!"

"Oh, yes!"

"I congratulate you, sir!"

"Thank you. My friend, Miss Wooten—and Mr. Chub Mildy."

"Ho, law!" Mildy gasped. "*Mister* Chub Mildy! Ho, law!"

Dan Delp came to his dazed and uncertain partner.

"Say, Chub, luck's shore broke our way! Hit's come, Chub! An' Jerry, the old sport! He's made good, yassuh! He told the truth, an' he's goin' to keep his word, yassuh! I bet on to hit!"

"Ain't I glad we didn't fill 'im full of sand an' sink him in old Mississip', like we mout of done," Mildy whispered gratefully.

"So'm I!" Delp whispered. "Hit 'd be'n a shame to do that to a feller like him; yassuh. He's honorable, he is!"

"Say, Jerry," Walts asked, "the *Copeland* wants to know what you are going to do. Bough killed himself, you know, and Faul has apoplexy."

"I'm going to go to work—take care of things, of course."

"Yes; but about the Swamp, Delta and Bayou Railroad?"

"What of that?"

"The affairs of Bough, Faul, Kulle and the estate are all mixed up in it. Kulle is almost crazy, if not quite. Have to watch him all the while, for fear he will go crazy and kill himself, the way Bough did. You have the whip hand. The estate will be intact, of course. But they are all ruined, if—"

"If I'm looking for revenge? But I'm not. They were friends of my father's, and they worked with him. We'll put the railroad through, of course. It's a great project—worth while, I know that. It 'll be something for me to do, something larger than kid's play!"

The party went to the hotel. Jerry took over the telephone and held conversation with Beaker, the attorney, and through him started the work of straightening up the various affairs of the Fander estate and of the executors who had risked their own fortunes, thinking the Fander estate would be theirs to manipulate as the foundation of the scheme.

Jerry left the estate in the project. That saved his executors, except Bough, who couldn't face the music.

That was all there was to it, of course.

But Jerry hired a railroad train to take his friends to Pittsburgh with him. He insisted that Delp, Mildy, Walts, and Shadder accompany him.

"You've got to go!" he said. "I want to straighten out the matter of your investments, and make sure that you get your income. I don't think I'd better say to Mrs. Wooten and Tressy that they must do anything. But if you'll go with us—I owe you both a great deal for your efforts in my behalf—your interest—" Mrs. Wooten hesitated

"I don't know," she meditated aloud. "I ain't neveh be'n to Pittsburgh, but I've hearn a heap about hit. I—"

"Pittsburgh's all right!" Jerry and Walts assured her.

"Let's go, mother!" Tressy begged. "Hones' I'd like to go up theh! Course I would! I hearn a riveh lady—yo' know, that red-haired, slim woman—they called her—what 'd they call her?"

"Yo' mean Blue-Eye Delia?"

"That's the lady—she said that Pittsburgh's good fo' freckles an'—"

"That's a new one on Pittsburgh!" Walts laughed with the others.

"An' perhaps I could learn manners theh, too!" Tressy teased. "Yo' see, mother, I ain't no manners to speak of—"

"Just ways, that's all!" Jerry suggested.

"Yassuh! A lady needs manners, mother! They don't get none to speak of on the riveh!"

"They gits lots of ways, though!" Mrs. Wooten remarked grimly. "They got to have ways. All right, gal. I kin stand hit, if yo' can!"

"I'm glad you'll come!" Jerry exclaimed. "I'm quite sure that you'll not regret it—no, indeed! Pittsburgh's a good old town, and I'm going to have a chance to get acquainted with it myself!"

(The end.)

HOW WE ARE DOING "OUR BIT."

BY F. W. DOSH,

Yard Clerk, East St. Paul Yard Office, Chicago, St. Paul, Minneapolis, and Omaha Railway.

WHEN trains arrive at this station all way-bills pass through my hands and it is my duty to carefully scrutinize them to see if any war shipments are in the train and if there are any, to advise the yardmaster so he can arrange to move on the first train, or transfer to connecting lines. If a car of government freight is found in bad order and needs repairs, it is my duty to notify car repairer, urge quick repairs and soon as O. K. to again notify the yardmaster that the shipment is ready for movement, and then keep an eye on it until it has left the yard.

Also, we frequently receive orders for empty cars to place at industries to load government material. These orders must be passed on to yardmaster and yardmaster's foremen, and when the cars are loaded, we must again notify all concerned to get them going in the first train. This all requires constant alertness, and in this way I am doing my bit to the best of my ability.

KEEPING TABS ON TELEGRAPH OPRS.

TIME was when a fortunately situated telegraph operator could loaf on the job and get away with it.

But that is a thing of the past, at least in the main operating-rooms of the large telegraph companies. Here apparatus of a new design has been installed which enables the man in charge to know at any moment just which operators throughout his division are busy and which are idle.

J. T. Needham providing that all metropolitan short wires be connected through enunciator units, a large number of which could be mounted in front of and accessible to a monitor operator. The monitor, observing the visual signal displayed when a branch office called, could in turn connect to the branch line, by means of a switching cord, any operator who at the moment was idle.

INCOMING CALLS ARE INDICATED BY LITTLE RED LAMPS WHICH REMAIN LIGHTED UNTIL THE CALLS ARE ANSWERED. IN THIS WAY THE MONITOR OPERATOR WHO SITS AT THIS SWITCHBOARD CAN TELL AT ANY MOMENT JUST WHAT CALLS ARE UNANSWERED. THE WHITE LIGHTS TELL HIM WHICH OPERATORS ARE IDLE

Former practise was to have all wires extending from the main to branch offices—which number from 10 to 200—connected to an individual set of Morse instruments at the main office.

With this system, unless an operator was maintained at each instrument at the main office, calls were likely to go unheeded, resulting in serious delay to telegrams.

About 1905 a system was introduced by

Later on — about 1912 — improvements were made in this system. The accompanying photograph shows this equipment.

The metropolitan telegraph lines, mostly underground, are brought into a monitor switchboard resembling somewhat a modern telephone switchboard. Incoming telegraph calls are indicated by miniature red lamps lighting up, and remaining so until the call is answered.

On the shelf-level of this board is mounted a bank of miniature white lamps, each one being connected by wire to an operator's position somewhere in the main operating-room. When an operator is idle, the white lamp at the monitor board indicates this condition.

The general result, therefore, is that at a given time all illuminated white lamps indicate idle operators and all illuminated red lights unanswered calls. The monitor operator's job is to connect idle operators with incoming calls.

This system equalizes the load, reduces delays, and constitutes one of the most noticeable differences between the telegraph of to-day and the telegraph of twenty years ago.

ERIE'S NEW NON-TELESCOPE CAR.

THE construction of the new steel cars of the Erie Railroad, designed with special reference to their power to withstand collision and derailment without destruction, is shown in the accompanying illustration. The distribution of metal throughout the car is so effected as to make the frame stiff without using very heavy members at any one point.

Furthermore, two new elements are introduced in the ends of the car-body—an antitelescoping tie of heavy plate, extending across from side to side, and special door-posts of vertical steel beams framed into the sills and to the tie-plate above. The plate serves also as a flat ceiling for the lavatory, passageway, and saloons.

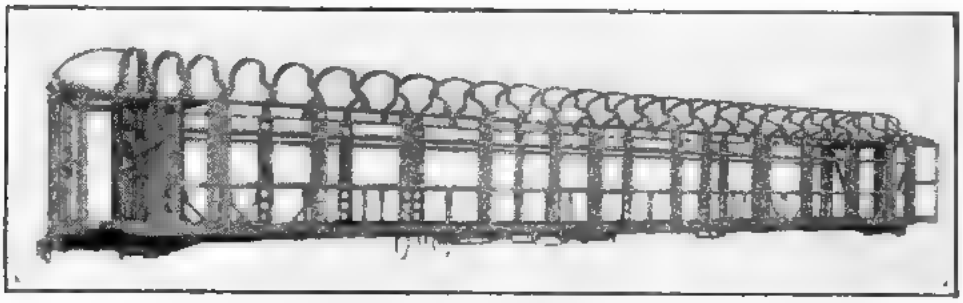
It is evident that the heavy door-posts, together with the antitelescoping plates which tie the side-walls together at the roof-line and their rigid attachment to the underframe, provide an antitelescoping bulkhead of great strength. The vestibules are of the usual construction and obviously are less capable of resisting a severe shock than is the heavy body-end construction.

Consequently, if the car is subjected to a violent collision shock, the vestibule structure may be expected to close up against the body of the car, and in doing so somewhat cushion the force of the blow. The further progress of the colliding body will be greatly checked if not arrested by the heavy body-end construction.

This construction should greatly reduce, if not eliminate, that most common and most destructive form of collision—the splitting open and telescoping of one car by one of its neighbors or by a locomotive.

This design is the result of a careful study of the effects of collisions and derailments upon cars, particularly those of all-steel construction, which has covered a period of six years.

The additional weight of material incorporated in the heavy body-end structure is more than offset by the reduction in weight effected elsewhere in the design. The complete weight of the coaches, including the four-wheeled trucks, but excluding the lighting equipment, is one hundred and eleven thousand pounds each.



A TYPE OF CAR BUILT ESPECIALLY TO WITHSTAND COLLISION AND DERAILMENT WITHOUT BEING DESTROYED.

Photo by courtesy of the Stillwell Engineering Corporation, makers.

By the Light of the Lantern

Ask us what you want to know

WE want to be as useful as possible to our readers, but, because of the great popularity of this department, we are obliged to impose certain restrictions. It is limited to the answering of questions of an informative, technical, or historical nature concerning the railroad business and allied occupations only. We cannot answer requests for positions or give information regarding employment. All letters should be signed with the full name of the writer, as an indication of his good faith. We will print only his initials. The editor begs that readers sending in questions will not be disappointed if the answers do not appear as early as expected. It frequently takes weeks to secure correct answers, owing to the complexity of the questions. All questions are answered free of charge. The editor earnestly requests his readers to bring immediately to his attention any errors they may find in this department. He reserves the right to refrain from answering any question.

THE TOM THUMB.

G. T., Millville, New Jersey.—The assertion in the "Book of Knowledge" of the Grolier Society that the locomotive Tom Thumb was the first locomotive in America is not correct. The writer evidently meant to say it was the first built in America. This engine was built only for experimental purposes

The Baltimore and Ohio Railroad began operating May 22, 1830, on the first division that extended 13 miles from Baltimore to Ellicott Mills, the cars being hauled by horses and mules. Shortly after an experimental car, having a sail, was tried, which was somewhat successful when the wind was right.

About this time Peter Cooper, the founder of Cooper Institute, of New York, was experimenting with a steam locomotive, and in August, 1830, his small engine, the Tom Thumb, was put to work on the Baltimore and Ohio. The demonstrations were so successful that they immediately decided the practicability of steam engines for railway operation.

The boiler of this small engine, which was upright, was about 20 inches in diameter, and a single cylinder only 3½ inches in diameter, and 30-inch wheels. The wheels were geared to give velocity

It is recorded that the engine could haul 4½ tons at the rate of 12 miles per hour, and one of the early reports of the Baltimore and Ohio informs us of it having made a trip of 13 miles propelling a car with 30 persons aboard at the rate of 15 miles per hour

Peter Cooper's Tom Thumb was undoubtedly the very first locomotive built in America.

The first locomotive to run in America was the Stourbridge Lion, imported from England, May, 1829, and making the first trip on this continent, August 8, 1829, at Honesdale, Pennsylvania.

2. The other reference in the book that you mention, namely, that to the "Mogul-Mallet type locomotive," is a new one on us. Have never heard the term applied to any Mallet type locomotive, regardless of wheel arrangement.

LOCOMOTIVE SPEEDS.

P. S. S., Berkeley, California.—The subject of high-speed runs was dealt with in this department of the last issue of the RAILROAD MAN'S MAGAZINE. If a locomotive of the Chicago, Burlington and Quincy ever attained the high speed of 130 miles per hour we would probably know of it, and we have no record of any such speed on that road.

There is no book published that gives a list of high-speed locomotive records. An article on the subject of high-speed American trains appeared in the last issue of the RAILROAD MAN'S MAGAZINE, and another on fast English schedules will be found elsewhere in this number

PENNSYLVANIA ELECTRICS.

2. The information you wish in regard to the new electric locomotive of the Pennsylvania Railroad is given in the articles by William H. Easton on pages 694 to 697 of the December, 1917, RAILROAD MAN'S MAGAZINE.

BOOK OF RULES.

F. D. C., Cincinnati, Ohio.—The book of rules and regulations issued by railway companies for the guidance of employees of the operating department are given to employees when entering the service. The books remain the property of the company, and must be returned by employees holding them.

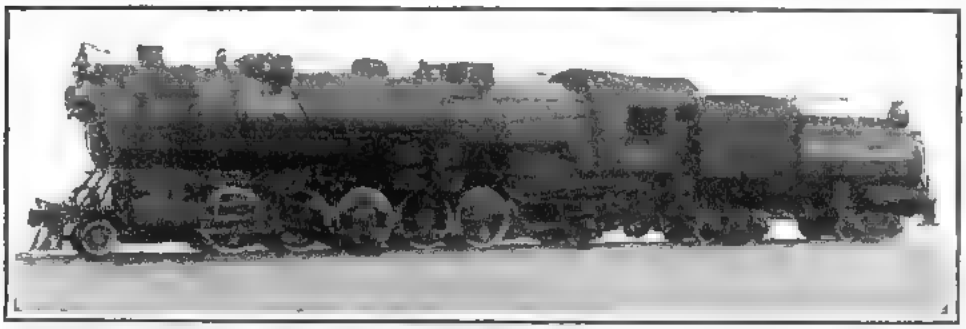
Hence we cannot advise you how such a book could be purchased. Each company has its own rules and regulations, and each issues a book of instructions covering them

999 ONCE MORE.

A. S., Conneaut, Ohio.—Engine No. 999 of the New York Central is now numbered 1086, and is in service on the Pennsylvania Division between Avis and Clearfield

B. AND L. E. LOCOMOTIVES.

2. The 500 class locomotives of the Bessemer and Lake Erie Railroad are of the Santa Fe or 2 10—2 type. Our illustration shows Engine



BESSEMER AND LAKE ERIE'S 500 CLASS LOCOMOTIVES ARE OF THE SANTA FE OR 2 -10—2 TYPE. THE 4.07 RATIO OF ADHESION IS REGARDED AS ESPECIALLY SATISFACTORY FOR FREIGHT-HAULERS.

No. 512, which is one of the lot of these heavy freight-locomotives.

With 332,700 pounds on driving-wheels and a tractive force of 81,000 pounds, the ratio of adhesion is 4.07, which approximates what has been generally found satisfactory for freight-engines, as the weight on the driving-wheels is then practically utilized for tractive purposes; and with reasonably careful handling full tractive force can be developed without slipping

The tender is of the Vanderbilt type, with a tank 105 inches in diameter. It has a capacity for 10,000 gallons of water and 15 tons of coal

The following are the other details of these locomotives:

Cylinders, 30 × 32 inches.

Boiler, type, straight; diameter, 92 inches; working pressure, 200 pounds

Fuel, soft coal

Staying, radial

Firebox: material, steel, length, 132 inches; width, 96 inches; depth, back, 76¾ inches; tubes, diameter, 5½ and 2¼ inches; material, steel.

Heating surface, firebox, 259 square feet; combustion chamber, 129 square feet; tubes, 4,760 square feet; firebrick tubes, 43 square feet; total, 5,191 square feet; superheater, 1,230 square feet; grate area, 88 square feet

Driving-wheels, diameter, outside, 60 inches; diameter, center, 53 inches.

Wheel-base, driving, 21 feet 4 inches; rigid, 21 feet 4 inches; total engine, 40 feet 7 inches; total engine and tender, 77 feet 8¾ inches

Weight, on driving-wheels, 332,700 pounds; on truck, front, 21,950 pounds; on truck, back, 49,600 pounds; total engine, 404,250 pounds; total engine and tender, 585,000 pounds.

Tender, wheels, number, 8; wheels, diameter, 33 inches; tank capacity, 10,000 gallons; fuel capacity, 16 tons.

KILOMETERS AND MILES.

D. W. K., Omaja, Cuba, writes that in one of our issues we gave a wrong figure for changing kilometers into miles, but is not certain just where we were wrong. One kilometer equals 0.62137 of a mile, or one mile is equal to 1.60935 kilometers.

If, in the answer on which he has commented, we gave .641, it should have read .621. Whether it was a typographical error or not, we are grateful for your having called it to our attention, even though we have been unable to locate the original query

Since you think it occurs in every one's life to try to "slip one over" on editors, we trust you will not find that your ambition has been attained in this instance. Keep firing, if you find errors in this department, but don't wait so long Help us to correct things in good time. We thank you.

VALVE-GEARS.

J. K., Brooklyn, New York.—The principal valve-gears in use on American locomotives are the Stephenson, Walschaert, and Baker. The ordinary link motion or Stephenson gear uses two eccentric-rods, imparting motion to a link having a sliding block to which one end of a rocker-arm is connected.

The other arm of this rocker is connected to, and thus moves, the valve-rod and valve. The point of cut-off as well as the direction in which the engine turns its wheels is determined by the position of the link-block and rocker-pin in the link

The link is suspended by means of a link-lifter

attached to an arm on the reverse shaft. When this shaft is turned by the operation of the reverse lever, reach rod, and reverse shaft arms, the link is raised or lowered, thereby moving the link-block and rocker-pin either backward or forward, and consequently causing the valve to move on its seat.

The Walschaert valve-gear is now being more generally applied to locomotives because the moving parts are lighter, and also because it is what is sometimes called an outside motion, and so is more readily accessible for inspection and repairs. It differs from the Stephenson in having only one eccentric-rod, the position of the valve being altered by moving the end of a bar attached to the end of the valve-rod up or down in the link without moving the link, and in having the valve-rod also attached to a lever that derives its motion from the crosshead.

The lap and lead of the valve is determined by the last named motion and gives a fixed valve, whereas with the Stephenson motion the lap and lead are variable and is effected by the valve-travel

The Walschaert derives its motion from an eccentric crank or return crank of the main crank-pin, or from one eccentric on the main axle. The eccentric-rod is secured to one end of the link, which is pivoted in the center on a pin held by a bracket bolted to the guide-yoke

The link-block is secured to a radius arm or bar, one end of which is connected to the valve-rod and the other to the lifting-arm of the reverse shaft

The Baker valve-gear differs from the Walschaert in the absence of the radial link in the Baker gear. Instead, a bell-crank is used.

The reversing movement is effected by an eccentric and rod attached to a reverse yoke, so that when the reach rod is moved backward or forward it changes the position of the bell-crank, and thus affects the position and movement of the valve.

The other gears in use are the Southern, Young, Joy, Pilliod, Alfree-Hubbell, and several others, but they are not in general use, and we cannot give space to their details at this time.

COLOR SIGNALS.

S. O'D., Seattle, Washington.—Rule 10 of the American Railway Association prescribes the following color signals:

Red indicates stop; purple on a night indication on dwarf signals indicates stop the same as red

The color indication for proceed, and proceed with caution, is left optional with the roads. Green is most generally used to indicate proceed, and yellow, caution.

White was used to indicate clear, or proceed, on the Pennsylvania until June of 1917, but it was replaced by green on account of the increasing use of white lights in buildings, streets, *et cetera*, adjacent to the railroad's right-of-way. Green and white is used for the flag stop, and blue to protect workmen engaged in repairing trains or cars, *et cetera*.

FREIGHT CLASSIFICATION ASS'N.

L. G. K., Long Beach, California.—Communicate with the secretary of the associations or committees, who will probably furnish the data you wish. The following are the names and addresses:

Central Freight Association, L. A. Lowrey, secretary, Transportation Building, Chicago, Illinois.

Pacific Freight Tariff Bureau, F. W. Gomph, agent, Phelan Building, San Francisco, California.

New England Freight Association, L. H. Peters, secretary, Boston, Massachusetts.

Western Classification Committee, H. C. Bush, Transportation Building, Chicago, Illinois.

Transcontinental Freight Bureau, B. T. Booze, chief clerk, 608 South Dearborn Street, Chicago, Illinois.

Southwestern Tariff Committee, P. Y. Versen, secretary, Century Building, St. Louis, Missouri.

Southern Classification Committee, 817 Grant Building, Atlanta, Georgia.

TRACK TANKS.

R. E. S., Cleveland, Ohio.—In America the first track tanks by means of which locomotives take water on the fly were laid down by the New York Central in 1870. By 1893 all main-line divisions were equipped, including the Lake Shore and the Michigan Central.

These track tanks were first used on the London and North Western of England, where they were introduced as early as 1857.

RAILROAD OFFICIALS.

C. M., Pittsfield, Massachusetts.—The president of the New York Central is A. H. Smith; the chief engineer, that is for the lines east of Buffalo, is G. W. Kittredge, both with headquarters at Grand Central Terminal, New York. The president and chief engineer of the New York, New Haven and Hartford are respectively Edward J. Pearson and Edward Gagel, both at New Haven, Connecticut.

B. OF L. F. AND E.

F. M., Brooklyn, New York The headquarters of the Brotherhood of Locomotive Firemen and Enginemen are at the Guardian Building, Cleveland, Ohio.

RAILROAD SCHOOLS.

M. N. R., Paw Paw, Illinois.—If you secure a position with a railroad company in the signaling department, a correspondence school course would certainly assist you in advancing in the signal engineering profession. If you wish to continue your studies in general railroad engineering, *et cetera*, we recommend to you a school in your own State, the University of Illinois.

CORRUGATED STEEL INTERLOCKING FENDERS ARE INTENDED TO PRESERVE THE ALINEMENT OF THE TRAIN IN A LATERAL AS WELL AS IN A VERTICAL DIRECTION TO PREVENT TELESCOPING

Their School of Railway Engineering and Administration combines courses offered by certain colleges of the university so as to provide training of a scientific character for those who wish to prepare themselves for the engineering, motive power, traffic, or operating departments of both steam and electric railways. This university offers four-year courses in railway and civil engineering, railway electric engineering, railway mechanical engineering, railway administration and transportation. Better write to the registrar, University of Illinois, Urbana, Illinois, for catalogues or other information you may wish

ANTICOLLISION FENDERS.

F. A. G., Syracuse, New York.—The leading express trains of the Great Central Railway of England, running between London and Manchester, have a new arrangement of interlocking, antitelescoping fenders, and anticollision buffers, the invention of Mr. J. G. Robinson, chief mechanical engineer of the railway

The arrangement of corrugated steel interlocking fenders shown in the accompanying illustrations of the ends of the carriages is intended to preserve the alinement of the train in a lateral as well as in a vertical direction to prevent telescoping of the vehicles in the event of a collision, as they act at practically the full width of the underframe.

A device designed for the same purpose is used on the ends of the platforms of the cars of the New York subway.

The improved cushioning resistance buffers are adapted to mitigate considerably the severity of a collision. Each buffer is fitted with strong, spiral springs designed to take a working load of 5 tons, and a reserve stroke of 15 tons, giving a combined resistance of 20 tons, which can be increased to 35 tons if desired

The spiral springs are so arranged on the piston of the buffer that after the ordinary buffer has been driven up to the working limit, and the shock be still greater, the bolts which hold the springs are so designed as to break away about 50 tons' pressure on each buffer, or 100 tons' pressure on the end of each vehicle, thus allowing each buffer to recede, and allowing the antitelescoping fenders to become interlocked to prevent the vehicles from mounting on each other. The bolts referred to are reduced in diameter for a part of their lengths so that they will break under a predetermined shock, and larger springs and bolts may be used to suit heavier loads if considered necessary

TRAFFIC INSPECTORS.

J. M. D., Omaha, Nebraska.—We were not surprised to learn that the roads which you mention never heard of traffic inspectors, as not all roads have them, while in many instances where such men are employed, they are known as inspectors of transportation

Their duties involve the inspection of the operation of stations, yards, and train-service, and the organizations maintained for such operation.

ANTICOLLISION FENDERS SHOWN IN THIS VIEW AND ABOVE ARE IN USE ON THE LEADING EXPRESSES OF THE GREAT CENTRAL RAILWAY, RUNNING BETWEEN LONDON AND MANCHESTER

They are under the direction of the general superintendent of transportation, to whom they report the conditions where the service can be improved, recommending the means whereby such improvements may be accomplished.

The inspector of transportation reports violations or misunderstandings of instructions, and while, as a rule, having no authority to issue instructions, he endeavors, by suggesting such methods as in his opinion are worthy of investigation and trial, to aid local officers in their efforts to improve the service.

On some roads inspectors of traffic do not cover the wide range of activities as described above; men are employed under the same general title to travel over the line and report the treatment and service accorded passengers and other patrons, and the public generally.

WORLD'S RAILWAY MILEAGE.

F. W. C, Seattle, Washington.—The mileage of American railroads aggregates 260,000, and forms nearly 40 per cent of the railways of the entire world. Russia comes next with 50,000 miles.

The other countries and their respective mileages in order are—Germany, 40,000; India, 35,000, France, 32,000; Canada, 30,000; Austria-Hungary, 29,000; Great Britain, 25,000; Argentina, 21,000; Australia, 20,000; Mexico, 16,000, Brazil, 16,000, Italy, 11,000; British South Africa, 11,000; Spain, 10,000; Sweden, 9,000, Japan (including Korea), 7,000; China, 6,000, Belgium, 6,000, and Chile, 4,000.

Of the world's railways outside the United States slightly more than one-half are government owned or controlled

LOCOMOTIVE CLASSIFICATION.

H. B., Mattapan, Massachusetts.—We gave in this department of the July, 1917, issue of the RAILROAD MAN'S MAGAZINE the details in regard to the principal methods of locomotive classification employed in the United States. There is no general system in use.

New York, New Haven and Hartford locomotive No. 1360 exerts a tractive force of 40,800 pounds.

CHICAGO ELECTRIFICATION.

R. S., Canton, Ohio.—The subject of the complete electrification of all the roads entering Chicago, Illinois, has been under investigation for several years. The committee not very long ago completed the most exhaustive report we have seen on such a subject. Answering your question, the Railway Terminal Commission of Chicago calls upon the Illinois Central to electrify its lines for all train service within the city limits in ten years.

The general demand for all of the other roads to electrify their equipment has been referred back to a sub-committee, the general opinion being that it would be ruinous to attempt such a gigantic undertaking at the present time.

Since the publication of the report of the special committee of experts on smoke abatement, the people of Chicago realize that the smoke enveloping the city is not caused by the locomotives, but by the many industrial concerns burning soft coal in their midst, and while electrification of transportation in densely populated districts has its advantages, it also has its first costs, which are utterly beyond the reach of any railroad entering Chicago at the present time.

When the population has doubled, then, and not till then, such expensive changes may be looked for.

SMALL ENGINES AT THE FRONT.

C. E H, St. Louis, Missouri.—When the war broke out in 1914 every class of motor vehicle in France was commandeered, as it was thought that such vehicles would prove ideal for transporting troops and supplies quickly from one point to another. But serious difficulties soon presented themselves, and the steam railway was the only solution of the problem.

Thus a large number of locomotives were required, and a great many of them were built in the United States, the Baldwin Locomotive Works alone having turned out about 3,000 small, narrow-gage engines for use behind the trenches. We are able to illustrate two of a number of different types.

In November, 1914, the first engines were built here for the purpose. At that time 20 of them were turned out in ten days by Baldwin. These were saddle-tank wood-burners of the 0—6—0 wheel arrangement.

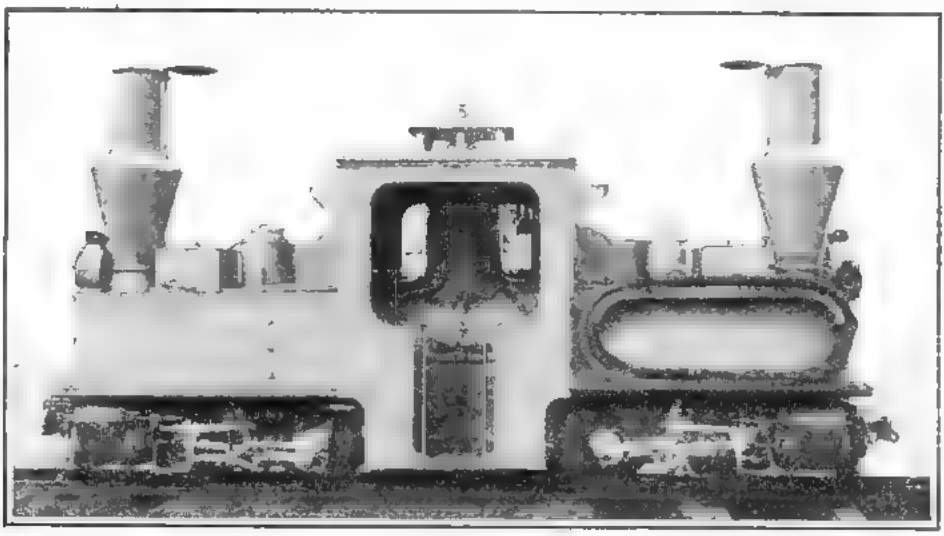
These engines weigh 29,000 pounds, all on drivers. Used to the roughest kind of service, and the road-bed not being of the best, it was found that the wheel-base was too short and the center of gravity too high for use under the conditions imposed.

The Pechot type was then considered, and about 300 of them were turned out by Baldwin. These engines, of the 0—4—4—0 wheel arrangement, are named after their designer, and are generally similar in construction to the Fairlie type.

The locomotive is carried on two steam trucks or "bogies," and is provided with a boiler having two barrels or cylindrical sections, and two fireboxes. The latter are placed in a single outside shell, which is located between the bogies.

Such a locomotive is exceedingly flexible, but has certain complicated features which have always been considered undesirable in American practise, and previous attempts to introduce engines of this type in the United States have proved unsuccessful.

Their use abroad has been confined to roads where curves are frequent and sharp, necessitating locomotives of unusual flexibility.



PECHOT TYPE NAMED AFTER ITS DESIGNER, IS ESPECIALLY ADAPTED TO NAVIGATE THE SHARP CURVES OF THE TRENCH RAILWAYS, OWING TO ITS EXTREME FLEXIBILITY

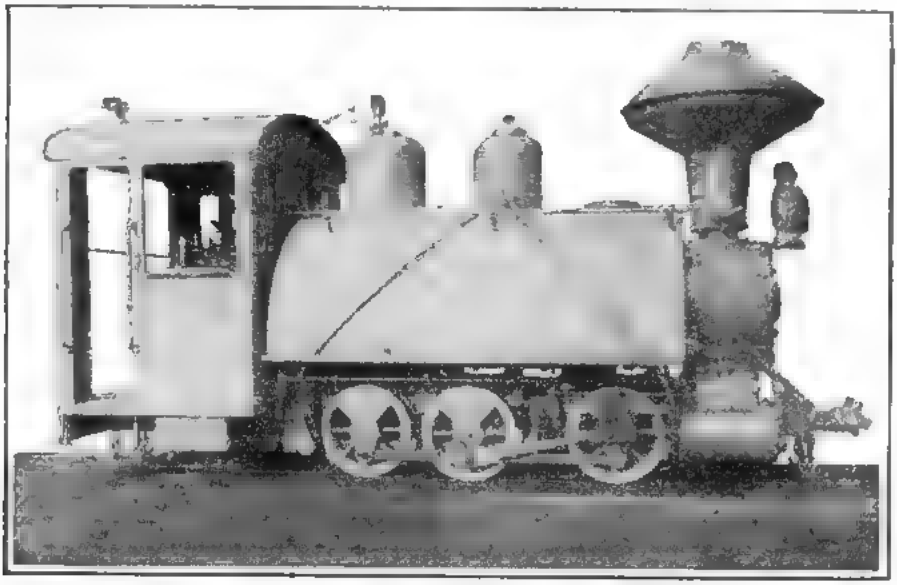
All four cylinders receive high-pressure steam, the distribution being controlled by circular balanced slide-valves operated by the Walschaert valve-gear.

EUROPEAN WAR CARS.

2. Of the many classes of railway equipment built in America for use in Europe, the steel trucks built for the French War Department by the National Steel Car Company are probably the most unique.

The trucks are of three types—four-wheel, six-wheel, and eight-wheel, all equalized. Various combinations of these trucks, effected by means of car-bodies, swivel platforms, bolsters, and reach-rods, provide a wide range of hauling capacity and adaptability to a variety of traffic, ranging from the movement of heavy artillery toward the front to the movement of soldiers toward the rear

Each truck contains a complete hand-brake mechanism which may be operated from the platform by means of a hand wheel mounted on a vertical brake-mast, or from the ground by means



FIRST TYPE OF FIRING-LINE LOCOMOTIVE 20 OF WHICH WERE TURNED OUT BY BALDWIN IN 10 DAYS THEY DATE BACK TO NOVEMBER, 1914 WOOD IS THE FUEL

of a forked handle pivoted to a sleeve turning loosely on the brake-shaft, which meshes with a ratchet-wheel keyed to the shaft

Our illustrations show a unit of four of the six wheel trucks built up with platforms, swivel supports, and reach-bars, and a type of well-car body used on the four-wheel truck arrangement

On such a well car body material of all kinds is handled, such as shells, *et cetera*.

They are also used for transporting the wounded when stretchers and hammocks are swung from the eyes at the top of the side stakes.

By the use of two pairs of six-wheel trucks, each pair connected with a platform and the two pairs joined by means of swivel supports and reach-bars, a load carrying unit of 79,365 pounds is available. By similar arrangement an eight-wheel truck unit with a capacity of 105,820 pounds is available.

Pictures of these trucks appear on page 290.

LOCOMOTIVE BOILER.

R. G. S., Syracuse, New York.—We have examined the question in regard to the distinctive features of the locomotive boiler, and also the answer as given by the author of the book on marine engineering, and while we were somewhat amused at the way in which he approached the subject, there is really nothing wrong with the answer, except that he has the cart before the horse, so to speak

He does not have the boiler set on backward, as you say. The gentleman in question was probably standing on the foot-plate of a locomotive when he wrote that answer, and while it is extremely concise, it is nevertheless correct, viewed from the angle in which he looked at it.

You and we would certainly begin at the front end, but, as you say, he is a marine engineer, and gives the best description he knows.

RAILROAD STATISTICS.

B. M. M., Shreveport, Louisiana.—From the latest report of the Interstate Commerce Commission it appears that there were at the close of the last fiscal year 259,210.86 miles of steam railway line operated, including 11,856.42 miles used under trackage rights.

The aggregate mileage of railway tracks of all kinds, including yards and sidings, was 394,044.26 miles. The increase in mileage for one year was 3,802.75 miles. The number of steam locomotives was 63,578; other than steam, 284.

Passenger-cars numbered 54,664, freight service, 2,326,987; company service, 96,508.

The average number of employees in service was 1,054,075. Of the capital stock outstanding for the roads 50.96 per cent paid no dividends. The average rate of dividends paid on all stocks was 4.71. The capital invested amounted to $17,525,576,908

During the year the number of passengers carried was 1,005,683,174, with an average of 34 miles for each passenger. The average receipts per passenger per mile was 2.06 cents.

Number of tons of freight carried was 2,225,943,388, with an average of 170 miles per ton. The average receipts per ton per mile, 0.716 cents.

The net revenue amounted to $3,472,641,941, and the operating expenses, $2,277,292,278. The net increase of income during the year amounted to $181,084,474.

STEAM DISTRIBUTION.

J. K., Brooklyn, New York.—Your long list of questions assumes the magnitude of a correspondence school's examination paper, and while we could not begin to describe in detail all that you wish, we give a general answer under the above heading of steam distribution with short description of the operation of the principal appliances involved that may be of interest to the general reader.

As is well known, the work performed by a locomotive appears in the rotation of the driving-wheels, which is accomplished by the action of a piston in the cylinders, where the energy of the steam's heat is converted into mechanical work.

The distribution of the steam in the cylinders is accomplished by the valves in the steam-chest or valve-chambers, which admit the steam to and exhaust it in the cylinders. These valves are of two general types, the D slide-valve and the piston-valve.

A balance slide-valve is one where a certain percentage of the steam pressure exerted on the top of the ordinary slide-valve has been prevented The balancing feature is obtained by a steam-table, extending beyond the extreme travel of the valve, and either bolted to the steam-chest cover or cast in one piece with it

The Allen-Richardson valve has its valve grooved for the reception of four snugly fitting strips, which are supported against the table by semi-elliptic springs, which make a steam-tight joint, and prevent any pressure reaching the enclosed part of the valve.

The American balance-valve obtains the same results, but uses circular, tapering rings supported by coiled springs. The small hole in the top of the valve is for the express purpose of allowing any pressure of water which may have accumulated on the top of the valve from whatever cause to escape to the exhaust port.

A piston-valve is a cylindrical, spool-shaped device having cast-iron packing-rings sprung into place on the valve, and operating in a cylinder of equal diameter. The valve-cylinder is provided with suitable admission and discharge ports and permits the valve to perform the same functions as an ordinary slide-valve.

Both slide-valves and piston-valves are in common use, but with the trend toward superheated steam, the piston-valve will probably come into universal use

The steam generated in the boiler is controlled

in its passage to the steam-chest or valve-chamber by the throttle-valve located in the steam-dome. On simple locomotives the steam enters the dry pipe, when the engineer opens the throttle-valve by means of a lever located in the cab of the engine, which conducts it to the tee-head located in the smoke-box, and thence to the steam-chests.

On superheater engines the steam is conducted from the tee-head to the superheater before being delivered to the steam-chests or valve-chambers The valves that control the steam distribution to the cylinders are so constructed as to move over ports so situated that steam will be admitted to one end of the cylinder at the same time that it is being exhausted from the other end.

They are so constructed that they admit steam to one end of the cylinder at one time, permit the steam to escape from one end of the cylinder at least as soon as it is admitted to the other end, and cover the steam ports so as not to allow steam to escape from the steam-chest or valve-chamber into the exhaust port.

WOMEN RAILROADERS.

MISS E. N. T., Virginia, Illinois.—Thousands of women have entered the service of railroad companies to make up for war-time deficiencies of men. A majority of these have entered railway work as clerks, but as a matter of fact they are being used in almost every branch of the service, the lighter kinds of machine-shop work, signaling, car-cleaning, *et cetera*.

The Pennsylvania experimented with women in various capacities for some little time past with most satisfactory results, and the New York Central has ordered the employment and training of feminine workers wherever possible in all departments

A gang of thirty women under direction of a woman bookkeeper is employed by the New York Central at Collinwood, Ohio, in sorting 3,000 tons of scrap nuts, steel plates, spikes, bolts, brake-shoes—practically every part of a superannuated engine or a broken-down car.

These woman examine and sort every piece of scrap; they do the work as well as men, and appear to like it.

As we have repeatedly stated, we cannot give the names of parties to whom application should be made for employment. Make application to the nearest division superintendent, who will furnish application forms and any other information you wish.

HEAVY GRADES.

D. A. S., U. S. S. Wyoming.—Statistics are not available as to what is actually the heaviest grade in the world. On the electrified section of the Chicago, Milwaukee and St. Paul the heavy grades are between Piedmont and Donald, 21 miles, 2 per cent, or 105.6 feet per mile, and the ruling grade of 1 per cent for 49 miles on the west slope of the Belt Mountains, which is equivalent to a rise of 52.8 feet per mile.

KANSAS CITY RAILWAYS.

P. B., Fort Snelling, Missouri.—The following roads enter Kansas City, Missouri: Atchison, Topeka and Santa Fe; Chicago, Burlington and Quincy; Chicago and Alton; Chicago Great Western; Chicago, Milwaukee and St. Paul; Chicago, Rock Island and Pacific; St. Louis and San Francisco; Kansas City Southern; Kansas City, Clap County and St. Joseph; Kansas City, Kaw Valley and Western; Missouri, Kansas and Texas; Missouri Pacific; Quincy, Omaha and Kansas City; Union Pacific system, and the Wabash.

ST. LOUIS RAILWAYS.

2. Roads entering St. Louis, Missouri, are: Baltimore and Ohio; Chicago, Burlington and Quincy; Chicago and Alton; Chicago and Eastern Illinois; Chicago, Peoria and St. Louis; Chicago, Rock Island and Pacific; Cleveland, Cincinnati, Chicago and St. Louis; East St. Louis, Columbia and Waterloo; St. Louis and San Francisco; Illinois Central, Louisville and Nashville; Louisville, Henderson and St. Louis; Missouri, Kansas and Texas; Missouri Pacific; Mobile and Ohio; Pennsylvania system; St. Louis Southwestern; Southern Railway system; Terminal Association of St. Louis; Toledo, St. Louis and Western; Wabash; and St. Louis Merchants Bridge.

ELECTRICITY IN CAR-LIGHTING.

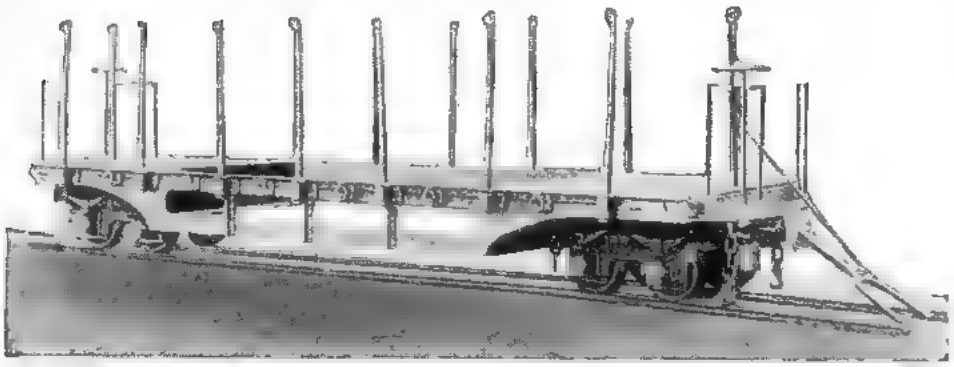
A. S. H., Holyoke, Massachusetts.—Three methods of electric lighting for railway-cars are in use: 1, The head-end system; 2, straight storage; 3, axle-driven generators.

The head-end system use is made of a generator driven by a steam engine at the head of the train, either in the baggage-car or on the locomotive. Electrical energy for the lighting is carried back from the generator to the cars.

The generator of a head-end system is usually installed in the baggage-car, and is driven by a steam turbine, steam for its operation being brought from the locomotive through suitable hose connections. As the steam supply is cut off when the locomotive is detached from the train, it is necessary to have a storage battery on one or more cars to keep the light going.

The head-end system gives efficient and economical results, but its great disadvantage is that light can be used only when a car is in a train with a generator equipment. If the cars are equipped with batteries to supply light during such times as the locomotive is disconnected, the proper arrangements for charging the batteries entail a sacrifice of simplicity and economy.

In the straight-storage system each car is equipped with a set of storage batteries of sufficient capacity to supply the lamps for the desired trip. As ordinarily applied, the equipment con-



FOUR-WHEEL TRUCKS EQUIPPED WITH WELL CAR-BODY, AFFORD A WIDE RANGE OF HAULING-CAPACITY SEE PAGES 287–288 FOR EXPLANATORY TEXT

sists of lamps, storage batteries, and charging receptacles, with necessary wiring.

At terminal yards the batteries are charged from a stationary power plant. The lamps operate directly from the batteries, a no-voltage regulator being used

This system of lighting which a holder contains, and the fact that the charging of the batteries consumes time, must be considered

Cars are not always available in one place long enough to receive the proper charge. The cost of equipping a railroad yard with the proper charging lines is also considerable.

In another system the car-axle is used to drive a generator, which supplies the lamps in the car and for charging a storage battery which supplies energy to the lamps when the car is running below a certain speed

The equipment consists of a generator mounted on either the car-body or the truck with some form of driving system between the car-axle and the generator; a storage battery to maintain the light when the speed of the generator falls below that at which it gives the proper voltage, regulating apparatus to govern the output of the generator at varying speeds; to give the proper charge to the storage battery, and to maintain constant voltage at the lamps, and some means of keeping the polarity of the battery charging current constant when the direction of the movement of the car is reversed

Of the three different systems of electric car-lighting, the axle-driven generator system is the one most used. This system renders the car independent of a stationary plant, and, in spite of its seeming complexity, it is the only one of the three systems capable of general application to cars

RAILWAY ASSOCIATIONS.

W. C. W., Newark, Ohio.—The territory on the Trunk Line Association includes that west of New England, traversed by the companies represented in the committee comprising the association, and east of and including Suspension Bridge, Niagara Falls, Tonawanda, Black Rock, Buffalo, Dunkirk, Salamanca, Erie, Pittsburgh, Bellaire, Wheeling, Parkersburg, and Charleston, West Virginia

We would like very much to give you a list of the roads, *et cetera*, for this association and the others in which you are interested, but space, or, rather, the lack of space, will not permit of it. May we suggest that complete details of these and other passenger and traffic associations are given in the quarterly supplement of the

A UNIT OF FOUR SIX WHEEL TRUCKS, SHOWING BUILT-UP PLATFORMS, SWIVEL SUPPORT AND REACH BARS HANDY FOR HAULING HEAVY ARTILLERY

"Official Railway Guide," which may be subscribed to for fifty cents per year.

CAR CAPACITY.

W. C. M., Derry, Pennsylvania.—We would publish your letter if it were not for the fact that you misinterpret the object of some roads in permitting cars to be loaded ten per cent over their marked capacity. In ordinary times it is indeed rare when cars are loaded with weights that even approach the marked capacity, and it occurs only on roads handling coal and ores, such as pig-iron, *et cetera*.

One of the greatest problems that has ever confronted railway officers is the car-shortage of the present times. Cars as a general rule are not loaded to anything approaching their capacity, and the roads have been making a strenuous effort to induce shippers, buyers, and railroadmen to cooperate with the view of relieving the situation, which has been aggravated on account of war-time conditions

Cars and all other railway equipment are designed from an engineering standpoint, which includes the factor of safety which you would inject into this subject. Recent investigations have shown that the best method of relieving this unusual situation and doing away with embargoes is to instruct shippers and others as to the best method of loading cars.

For instance, it has been shown that barrels loaded so that 100 barrels, weighing in all 37,280 pounds, and practically measuring 19¾ inches at the widest part, go into a car under usual conditions. As many as 244 similar barrels can be put in the same car with a total weight of 90,060 pounds.

A carload shipment of salt four tiers high and containing 536 bags with 53,600 pounds weight can be replaced with a carload lot made up of 1,100 bags of 111,000 pounds total weight. This is in proportion of weight as 134 is to 275, or about 1 to 2.2 when reduced to a decimal fraction.

A car of 65 barrels of oil weighing 26,650 pounds can be replaced by one carrying 148 barrels of oil at a total weight of 60,680 pounds.

Another case is the loading of cotton bales. Usually fifty bales are carried, and the total weight is 25,000 pounds. This arrangement, which is one bale high, can be improved upon so as to accommodate 108 bales three tiers high, and weighing 54,000 pounds.

The proposed load arrangement gives the car more than twice its former capacity, without causing any excess weight to be on the trucks and wheels.

There is much efficacy in the full carload lot. Not only does it release cars for service, but in a sense it adds vastly to the equipment of any railway, as it reduces the actual work of the locomotive; for, other things being equal, the fewer the pairs of wheels in a train, the more easily that train can be moved.

Telegraphic & Telephonic

IF there is anything you want to know about the telegraph, telephone, or radio telegraphy—if you have an operating problem that puzzles you—if you want to discuss a question of theory—write the RAILROAD MAN'S MAGAZINE. We have engaged a technical expert who is one of the leading authorities of the country on these subjects. Ask him. He knows!

TELEGRAPH SCHOOL.

P. H., Missouri Valley, Iowa.—A good school in your part of the country is the Dodge Telegraph Institute, Valparaiso, Indiana. Students who remain in this school until they are proficient telegraphers have no difficulty in procuring positions upon graduation.

RADIO SCHOOL.

T. A., Middle Village, Staten Island, New York. —The Y. M. C. A. Radio School, located at No. 145 East Eighty-Sixth Street, New York City, is a first-class place to take up a course in radio telegraphy. The United Fruit Company, so far as we know, does not maintain a school for operators; but if you desire to get in touch with that company, you might communicate with Mr. George S. Davis, superintendent, No. 17 Battery Place, New York City.

TELEGRAPH STUDENT.

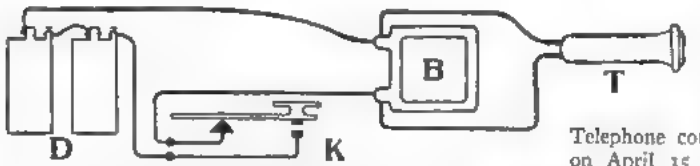
W. D. M., Durham, North Carolina.—The Santa Fe Railroad telegraph schools at Topeka, Kansas, and at Los Angeles, California, are rather far away for you to attend. These are, of course, high-grade schools, and employment upon graduation is assured.

We do not know of any private telegraph

school in your vicinity, but you might call upon the manager of the Western Union Company at Durham with a view to arranging permission to study telegraphy in that office. Or if you would prefer railroading you might communicate with Mr W T Caldwell, general superintendent, Southern Railroad, Chattanooga, Tennessee, asking if a place could be found for you to practise in some depot on that line.

RADIO BUZZER SET.

HAROLD W. C., Council Bluffs, Iowa.—In order to practise the Continental code as used in radio telegraphy, it is advisable to procure a buzzer set.



RADIO BUZZER SET. T, IS TELEPHONE RECEIVER, D, 2 DRY CELLS; B, BUZZER; AND K, A KEY

A set may be made up by using an ordinary electric buzzer, or an electric bell with the gong and tapper extension removed, connecting this in series with an ordinary telegraph key and a cell or two of dry battery.

If you have no material on hand, you can purchase through the Railroad Book Supply Company, 838 Columbus Avenue, New York City, a strap-key buzzer set, comprising buzzer and key on one base, for $1.40. Or if you have a telegraph-key, you can purchase for one dollar through the above-named company a high-grade buzzer giving a high-pitched musical note, the tone of which is identical with that heard in regular commercial radio operations.

This buzzer should be connected with one dry cell, a sending key, and any kind of telephone receiver; the sender then hears the signals in the phone the same as in actual radio service

If you have no friend with whom you could practise in order that you may learn how to copy (receive) the signals, a good idea would be to get the phonograph radio record No. 5-6 containing about 125 words in the Continental code transmitted by buzzer.

LEARNER'S INSTRUMENT.

S. B., Jacksonville, Texas.—In order that you may get an immediate start in the telegraph business we would advise you to take up land-line Morse telegraphy instead of wireless. In a year or two, should you still desire to transfer to the radio field, you could then make the change without much delay

If you write to the Railroad Book Supply Company, 838 Columbus Avenue, New York City, stating just what kind of apparatus you want and about how much you wish to pay for same, your wants will be attended to promptly and to your advantage.

A. T. & T. CO., AND W. U.

R. H. C., El Paso, Illinois.—Answering your questions in the order submitted:

1. The American Telephone and Telegraph Company is the present official name of the American Bell Telephone Company

2. In 1907 Mr. Theodore N. Vail returned to the A. T. & T Co. as president. In 1909 the A. T. & T. Co. purchased a controlling interest in the Western Union Telegraph Company, with the object of attempting to derive benefits from the joint operation of lines and offices.

In 1910 Mr. Vail was elected president of the Western Union Company In 1914 the Western Union Bell Telephone combination was dissolved, and on April 15 of that year Mr. Newcomb Carlton succeeded Mr. Vail as president of the Western Union Telegraph Company, Mr. Vail remaining president of the A T. & T. Co.

3. So far as we know, Mr. Carlton was not previously in the telegraph or telephone business. He had been European representative of one of the large American electrical manufacturing companies.

4. Colonel R. C. Clowry retired from the presidency of the Western Union Company when Mr. Vail succeeded to the office in 1910.

ST. LOUIS-NEW ORLEANS.

H. L. M., Washington, District of Columbia.—In the Western Union main office at St. Louis, Missouri, there are about 325 operators, and in the W. U. main office, New Orleans, about 175 operators. "NY" Western Union office, New York, has operating table seating capacity for 1,025 Morse operators.

MAIN AND LOCAL CURRENTS.

G. L. D., Duluth, Minnesota.—The armature or "tongue" of a telegraph relay is so constructed that it will have as little weight as is consistent with the required mechanical strength. The reason for this is that the current in the main-line circuit is only about one-twentieth of an ampere—a strength not sufficient rapidly to move the heavy armature of an ordinary telegraph sounder

The relay armature when it is operated opens and closes the local circuit, in which ordinarily only one sounder is connected, and in which the current strength is about one fourth of an ampere, or sufficient rapidly to move the comparatively heavy sounder armature.

If one-fourth ampere current were supplied in the main-line circuit, relays would not be necessary, as the sounder will operate satisfactorily on

that current strength. However, it would require nearly one thousand gravity cells to maintain that strength of current in a two-hundred-mile line of No. 8 iron wire.

The voltage of a thousand cells of battery would be dangerous to the lives of switchboard attendants or others who might come into contact with wires or metal parts of instruments and with earthed contacts at the same time.

Voltages higher than four hundred are rarely used in telegraphy.

PHONOGRAPH MORSE RECORDS.

J. F. H., Beachmont, Massachusetts.—I do not think you would have any difficulty with the omnigraph. Many students have found this instrument very helpful.

If you have a disk phonograph of any make, you might try one or two of the Morse records. They cost $1.25 each, and undoubtedly are a great help to those who desire to learn how correctly to form Morse characters.

Records Nos. 11-12 or 13-14 contain matter which should help you in learning to copy from the wire. Records may be purchased from the Railroad Book Supply Company, 838 Columbus Avenue, New York City.

WAY-OFFICE ON DUPLEX.

W. R. E., Brooklyn, New York.—If the duplexed wire is normally operated in but one direction at a time, a way-office drop may be cut in at any point between the terminal stations, the way station requiring only a 150-ohm relay, a key, and a sounder. All that is necessary is for one terminal station to keep his sending key open while the other terminal office is sending, the idea being to have plus potential to line at one end of the line while negative potential is connected to the line at the other end by closing the key.

The intermediate or "drop" office may then read the signals, and may operate the circuit by means of his key, the same as if the wire were being operated as a single Morse line.

LOWELL, MASS., W. U.

M. D., Joplin, Missouri.—The name of the Western Union Telegraph Company's manager at Lowell, Massachusetts, is Edgar H. Davis.

HELPER'S POSITION.

G. F. B., Denver, Colorado.—We believe you will be safe in taking the place as station helper, either on the Santa Fe or on the U. P. Within a short time you should be qualified to hold a position as operator.

Once you enter the service it is not likely that you would at any time in the future be displaced by another man merely because you are minus a finger or two

The thing for you to do is to demonstrate to your immediate superiors that your loss does not interfere with your ability to do good work.

When you become a competent telegrapher, you would have no difficulty in finding a place that perhaps would be more suitable to you than working as a brakeman.

LEARNER'S SETS.

G. L. M., Worcester, Massachusetts.—Learner's telegraph instruments to operate on two dry cells may be purchased for $2.70, $3.25, and $5.50 each. The first set consists of a key and sounder on one base, the sounder wound to 4 ohms resistance.

The second set has key and 4-ohm sounder on one base, and is of good grade of workmanship. The third set is a high grade outfit, the same as used in regular railroad and commercial offices. Key and 4-ohm sounder are mounted on one base.

These instruments may be obtained from the Railroad Book Supply Company, 838 Columbus Avenue, New York City.

RAILROAD VETERANS.

L. L. H., Portland Maine.—The New England Association of Railroad Veterans was organized April 21, 1912. The association's headquarters is at 249 Friend Street, Boston, Massachusetts.

OPERATOR'S FIST.

THE operators' penmanship contest recently conducted in the columns of the RAILROAD MAN'S MAGAZINE created interest so widespread that it would seem that practically every telegrapher in the country either writes a good "fist" or desires to learn how.

Since the last issue of the magazine went to press many additional specimens of handwriting have been received. The best of these was submitted by Mr. F. H. Sidney, Wakefield, Massachusetts; C. T. Moore, Nevada, Missouri; E. A. Randall, Detroit, Michigan; Mary Meeker Mounts, Schuyler, Nebraska; Lucile Smythe, Starbuck, Washington, and radio operator R. C. Alber, of the s. s. Currier.

The letters which accompanied the specimens sent in by the two ladies mentioned are very clever, and right here we are prompted to state that all the good things we have written during the contest about the praiseworthy characteristics possessed by capable telegraphers holds true for the girls as well as the boys.

Earl Thompson, one of the winners, in a letter to the editor, furnishes a clue as to how he came to be a good penman. Mr. Thompson says:

> My father taught penmanship, and my own penmanship teacher at school always impressed upon the students the necessity of forming a mind-picture of the letter to be made before making it.

Mr. O. F. Nelson, of the Great Northern Railway, New London, Minnesota, suggests that we start a telegraphers' postal-card exchange, so that

all telegraphers interested in good penmanship may start a scrap-book. It may be that the plan would grow to unmanageable proportions were we to undertake to carry it out; but, at any rate, we suggest that all who desire to do so forward Mr. Nelson a specimen of their respective fists.

Several others suggest that we conduct a contest for those who can turn out neat train-order copy. From some view-points this would be desirable; but it is more difficulty to reproduce "flimsies" than blacking copy on white paper.

And also we think that operators who do artistic work with the stylus should aim to do good work with the pen as well. Letters, booking, report-making, and public telegrams are written with pen and ink, and in all of this work there is need of more careful work

In the next contest we hope to see the railroad operators give the commercial men a run for the prizes, and not allow the latter to walk away with the three head tickets

WIGWAG SENDING.

G. L. L., Syracuse, New York.—On long lines worked duplex, and where three or more automatic repeaters are in circuit, wigwag or vibroplex sending very often is reported as too light by receiving operators. Often, too, calls are made for a new balance of the duplex when in reality the trouble is due to light sending.

Answering T. Y. L., Detroit, Michigan, in the November RAILROAD MAN'S MAGAZINE, we stated that vibroplex sending could be made heavier, and the signals made to carry better, by shunting the vibroplex binding-posts with a resistance coil The value of the resistance required depends upon the voltage and current used in the key pole changer circuit. For 110-volt locals an 8,000-ohm coil, for a 40-volt local a coil of 1,000 ohms resistance, and for primary battery locals a coil of 200 ohms

Connecting shunt coils across vibroplex points, or around pole-changer local binding posts, has speeded up the operation of many duplex circuits, and second side of quadruplex circuits, which without them had been unreliable

COSTON LIGHTS AND VERY SIGNALS.

GEORGE D. G., Bayonne, New Jersey.—In the January RAILROAD MAN'S MAGAZINE, under the heading, "Too Many Army Codes," we referred to the Coston light signals and Very signals as being among the subjects constituting the examination given Signal Corps applicants.

B. Franklin Coston was a Philadelphian by birth, but a Frenchman by descent. Coston was connected with the United States navy for a year or two prior to 1849, and during this time invented his signal system. He died a year or two later while still in the early twenties.

Ten years later Coston's clever widow perfected the signal-light inventions and had them patented.

Since 1861 the Coston lights have been widely used by practically all navies of the world

The Very signal, or pistol-rocket system, is the invention of Lieutenant Very, of the United States navy, and was first brought out in the year 1878.

ERIE RAILROAD.

T. M. H., Steubenville, Ohio.—Mr. E. P. Griffiths is superintendent of telegraph of the Erie Railroad Company, with offices in Jersey City, New Jersey.

OPERATORS WITH THE COLORS.

THE names of a few of the railroad telegraphers who have joined the United States army follow:

From the New York Central—G. R. Stover, M. E. Flanner, J. Curran, and Messrs. McAlpine and Mitchell

Baltimore and Ohio—J. A. Smith and C. B. Smith

Southern Pacific—E. D. Spence, also Messrs. Staunton and Gentral

Northern Pacific—August Parent, C. E. Kitner, A. C. Lyssow, G. F. Kane, and Messrs. Lenn, Rogers, Murphy, Thompson, Massena, Amick, Frey, Hetzler, Bruskrud, Manes, Laidlaw, Taylor, Gaardsmoe, Fenne, Herzog, Buck, Fisher, Zech, A. J. Kelley, T. B. Kelley, Russell, Herberg, and Eyres

Southern Railway—Watson, Hodges, Moore, and Drumwright

C. and N. W.—Zadnichek, Roby, Goss, Carroll, Meyer, Staley, Thompson, Zeeches, and Russell.

Texas and Pacific—A. L. Barbier

Illinois Central—W. A. Allen.

Chicago and Great Western—J. H. Littel

D., S. S. and A.—F. E. Wubbena and W. L. Wubbena

C., R. I. and P.—Anderson, McGraft, Ocheltree, Jenkins, Bullis, Croft, Vineing, McGregor, and Jennings.

C., B. and Q.—Sweatt, Lindell, Allison, Wilson, Van Slyke, and Phihal

K. C., M. and O. R. R.—Blankenship and Manaugh.

Chicago and Alton—Fray and Read

Oregon Short Line.—C. H. Pearce.

T. and O. C. and Z. and W. Rys.—D. K. Robinson

Most of these men have enlisted in the Signal Corps.

If those who enter the national service will send us their names we will be glad to announce them, and when the war is over we could then make up a grand roster of the Fighting Ops.

OPERATORS' CRAMP.

R. L. D., Milwaukee, Wisconsin.—The Candler system of physical exercises for the correction of writers' or operators' cramp is reported to be quite effectual in restoring the usefulness of muscles exercised in writing and in operating a telegraph key. Particulars may be obtained from the Candler System, 818 Leland Avenue, Chicago.

FROGS.

It is estimated that a locomotive will last on an average from twenty-five to thirty years.

Coal to the amount of 80,000 tons has been floated down the Ohio River on a single artificial flood.

Italian government has placed with the Lackawanna Steel Company an order for 20,000 tons of rails.

Many large lines have eliminated observation sleeping-cars from their trains at the suggestion of the government.

Thirty-two per cent of the foreign-born employees of the Pennsylvania Railroad have invested money in Liberty Bonds.

New York's subway and elevated system carried last year 763,574,085 passengers—more than any other railroad in the world.

Marshall, Texas, has passed an ordinance taxing all telephone, telegraph, and electric-light poles in the city one dollar each.

Motorman on a small, wooden shuttle-car in Queens County, New York, was so badly crippled in a collision that the court awarded him $48,500.

Railroad War Board has it in mind to build 100,000 freight-cars and sell them to the railroads of the country on twenty years' time at four per cent interest.

Telegraph companies are beginning to worry lest their scheme for employing girls as messengers be knocked on the head by the height of the heels on the girls' shoes.

To secure greater war cooperation an association has been formed by the railways of Canada. It is known as the Canadian Railway Association for National Defense.

Baldwin Locomotive Works, employing 20,000 men, are now breaking all records by turning out seventy-two locomotives a week. These engines are for government use.

John F. Hylan, New York City's new mayor, served as a railroad water-boy, trainman, fireman and engineer, and is still a member of the Brotherhood of Locomotive Engineers.

Fireman on West Shore Railroad was awarded a judgment of $30,000 for being driven insane when he was struck on the head by a fire-hook. The man will never recover.

It is estimated that the saving of meat in dining-cars and railroad restaurants by not serving it on Tuesdays now equals 85,000 pounds annually, with a money value of $250,000.

Wilson's first exemption rule was to discharge a New Jersey telephone worker from the draft. The President held that the maintenance of telephones was essential to carrying on the war.

Moving-picture concern sent a package of films from Buffalo to Rochester by aeroplane, the shipment having missed the train. The seventy-mile flight was made in forty-five minutes.

Two of the Baltimore and Ohio Railroad's big piers at Locust Point, Baltimore, stored with great quantities of munitions and supplies, were burned down recently, probably by an incendiary. Property damage, $4,000,000.

To save fuel, the Chicago, Milwaukee and St. Paul Railroad is rushing the work of electrifying its Cascade Mountain section, running from Othello, Washington, to Seattle and Tacoma.

At the Sheepshead Bay track, New York City, November 16, Ralph de Palma, driving a Packard automobile, fitted with a Liberty motor, traveled a distance of 633 miles in six hours, or at the rate of 105.5 miles an hour.

The deposed Czar of Russia is said to have invested $50,000,000 in the Pennsylvania Railroad, $10,000,000 in the New York Interborough Rapid Transit Company, $5,000,000 in the New York Central, and $5,000,000 in the Baltimore and Ohio.

MY HAREM.

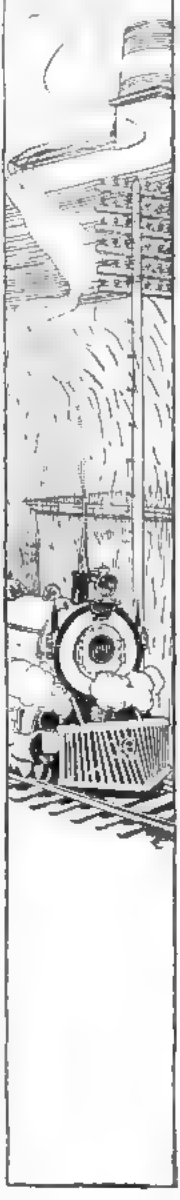
BY GEORGE ALLAN ENGLAND.

I'VE got a rare harem of beauties—
Of beauties I love, every one.
One's always with me, where'er I may be,
From sun-up to set o' the sun.
But never a beauty is jealous,
And never a beauty talks back,
Though white, gray or brown, or as gold as a crown,
Or ruddy, or glossy and black.

There's Mag—she's a genuine meerschaum;
She's colored with long, loving care;
And Dolly's a clay that I purchased one day,
An idle half-hour to share.
And Betty's a little French brier,
No cooler, no sweeter than she!
Ah, faithful are all, and whatever befall,
They're gentle, they're soothing to me.

There's Calabash Kate—she's a pippin,
Just right for a novel, you know,
When the fire burns bright, and the baccy's just right,
And the windows are smothered in snow.
And Sue, from Missouri, a corncob,
Is seasoned just right; she's a dear.
I love 'em with zest, but which one I love best,
Why, I couldn't decide in a year!

Oh, steadfast and true is my harem,
And I am right faithful to all,
They've comforted, blessed me, and cheered and caressed me,
In springtide of life, and in fall.
Old girls, you're a bevy of beauties,
At home or on mountain or sea.
God bless you, each one, that from sun-up to sun
Has been loyal and loving to me!



RIO GRANDE'S NEW HEAD A PLUGGER.

WHEN Edward L. Brown came to the Denver and Rio Grande Railroad recently as its newly chosen executive, it was said that he was tackling one of the most difficult jobs in railroading in America.

The struggle for the control of this property among the Goulds and the factors contending for supremacy of the Missouri Pacific left the Rio Grande in a rather unsettled condition

So the job required a man of tact, experience, and level-headedness. Few men could be found that were better fitted for the post than Mr. Brown. He is a man who has been through the mill and has made good.

EDWARD L. BROWN, THE NEW HEAD OF THE DENVER AND RIO GRANDE, STARTED AS A MESSENGER-BOY WITH THE ROCK ISLAND

As vice-president of the Rio Grande some years ago, he had direct charge of the reconstruction of Soldier Summit, Utah, a work which involved the elimination of the road's most serious traffic congestion by replacing the four per cent line with fifteen miles of two per cent line. This was regarded as the most important improvement undertaken by the road in recent years

Born in Iowa in 1864, Mr. Brown first became identified with railroad work in the humble capacity of a messenger-boy with the Chicago, Rock Island and Pacific when he was only eleven years old. He remained with this system for the next fifteen years, serving as telegraph operator, station-agent, and train-despatcher.

Later he became general agent of the St. Paul and Duluth, with headquarters at St. Paul, Minnesota. For a time he occupied the positions of chief despatcher and superintendent of telegraph for the same road, being promoted to master of transportation, a job which he filled from 1891 to 1896, only to be made superintendent. Here he remained for four years.

Shortly after the birth of the new century Mr. Brown found himself a division superintendent on the Northern Pacific, and two years later he was made superintendent of the Montana Central. Promotion came rapidly in the next nine years, and he was given various important positions with the Northern Pacific.

It was not until 1912 that Mr. Brown came as vice-president to the road of which he is now the head. And the following year he was elected vice-president of the Western Pacific, also. In 1916 the presidency of the Minneapolis and St. Louis was awarded him, but he was obliged to give up this position in March of last year on account of ill health.

A CAVALIER OF THE TELEGRAPH.

BY WILL SEBELLE.

Being Some Account of Old Dave St. Clyde, Ex-Sea Dog, and of His Last Adventure.

"BETCHA boots!"

Invariably he boomed it as an indication of his assent. Just as often his poor old brown eyes would roll, and the clear whites would show, and his olive-colored, almost dark face would seam and pucker.

"Betcha boots!" he was booming to a few idle check girls near the tubes in the operating-room of the Western Empire Telegraph Company. "I've been around the world a lot, and I know a pretty girl when I see one."

They were looking in the direction of the New York wire, to which Helen Rose, check-girl, had gone to hang a bunch of business for sending.

Helen Rose embodied all the fundamentals of grace and frank, unembellished charm. She was lissome, and her abundance of fluffy, golden hair was an accentuation of the picture she presented.

As Allan Denman, bonus man and crack operator on the New York wire, looked up at her and smiled, old Dave caught the expression on Denman's face. It was one of profound admiration.

"She has personality," old David St. Clyde was shouting again; "something that swarms over you and makes you forget your troubles while floating around in the calm of her smile. Betcha boots!"

A peculiar, interesting character was old Dave with his romantic name. As he slouched over to the dynamos behind the switchboard, his inevitable piece of lint cloth—waste, he called it—hanging from a side-pocket, the long, yellow-stained stem of his pipe sticking out of the other, the check-girls laughed, caught at some leather carriers in the tube-basket, emptied them of their contents, and went about their work.

"Sixty-five and still under sail," was his often-repeated declaration.

He was always alluding to the sea, this lone, bent figure, with his swarthy, wrinkled face, sagging eye-pockets, and long, drooping, grayed mustache with yellow spots in it where that long-stemmed pipe of his came in contact.

By his own statement, he had come to the company twenty years before, in Chicago, at a time in the year when the great freeze comes upon the lakes. His ship had been tied up.

That's when he heard the singing and crooning of the telegraph wires — down Wabash Avenue; when it occurred to him that he would like to leave the water and go aloft with a pair of climbers strapped about his ankles.

That was just after he had suffered the two deepest wounds of his life; when he stood, in the prime of robust manhood, with bowed head and saw his daughter, just blossoming to a delicate, magnificent flower, follow her mother into the shadows of eternal night. That's when he started adventuring for the company; when he traveled from place to place, climbing poles, slinging them into holes, shaping lines, often in the teeth of storms.

That's when his powerful frame began to bend, to droop forward at the shoulders; when, despite his resolute efforts to appear buoyant, hopeful of the goodness in life, he began to take notice of the fact that he was failing.

Many places felt the enforced cheer and sea-rough skepticism of old Dave as he worked west, reduced at last to a condition that permitted him to work only at cleaning dynamos and motors with his inevitable lint cloth.

Geniuses of observation and insight into human nature caught the falsetto of his voice at times; knew that those two wounds in the old fellow's heart he was so bravely trying to hide would never heal; knew that in the ripple of music he played on violins he had made himself, his poor old heart was swelling with memories of the past.

Old Dave St. Clyde, as the attacks became worse, putting him down sometimes for a month, at last arrived in San Francisco. He looked like a stevedore, or pirate, as he shuffled into the operating room of the Western Empire, one day, and showed his transfer papers. He was assigned to the dynamos behind the switchboard.

His colorful character impressed itself. Polished coconut shells with dainty plants in them appeared in the lightwell windows, also carved and polished ornaments, all from his hand.

Chiefs, operators, check-girls, filing-clerks, and bookkeepers paused to hear his tales, to catch the raucous booming of his voice, so remindful of storm-driven breakers splitting over rocks; for his yarns were always of the sea, and the man was a sea type—all but the grease-stained piece of lint cloth of him, hanging from his coat pocket.

Then, one day, came Helen Rose, plainly dressed, smiling.

She started as a check-girl; and the first day she stopped at the railing near the switchboard with another girl to speak to old Dave, a lump came into his throat; while he spoke, his mind was off in the past, in a little house near the Great Lakes, where just such another girl had sung, had worked and sent sunshine streaming into his life. Somehow, old Dave's tale was not so convincing that day.

Then he formed his opinion of her. She was like the other dream girl, pure as riven snow, a sparkle, brimful of intrepid enthusiasm.

She was studying to become an operator. That's when old Dave conceived the idea that she had personality; something that swarmed over you and made you forget your troubles; a psychic emanation, perhaps, from the depths of her laughing blue eyes. Betcha boots!

Day by day he watched her, more so from the morning he had caught the expression on Allan Denman's face as he looked up into hers. Day by day he polished coconut shells, made fancy pin-cushions, told tales, endeared himself, fought off an approaching spell of his old sickness, and watched her progress.

She soon learned. Any one could move quickly in a Morse education with Allan Denman as a tutor.

Was not Denman a crack bonus operator, an ex-cable man, one who knew both the Morse and Continental codes, and who was at ease at a key whether it be on land or a shipboard?

Yes, old Dave noted her progress; each day, after Denman "punched off" and turned in his bonus slip, old Dave saw him, his sleeves rolled, just as he worked on the "long trolley" to New York, take little Helen to an inactive wire somewhere and instruct her.

In three months she graduated to a branch office wire, a full-fledged "mill" girl who could "take" to the tune of twenty-five words to the minute.

Then old Dave's theory of that first glance Denman had given Helen was confirmed. The love god was at work. Betcha boots! He knew it. Ah, it was the same the world over!

Yes, the love god was at work. Old Dave, faring forth from his room in a lodging-house on Kearney Street one evening, saw them pass, Helen and Allan.

He paused and looked after them. Going to the theater, most likely.

Something seemed to clutch at his heart. It would be terrible if the girl he had come to regard as the material reminder of his daughter, of his dream girl, was to be taken from the life of the operating-room, if one more stream of sunshine was to be deflected. It seemed so. He knew the love god was inscrutable.

He continued his lonely existence, dynamo-wiping, carving, polishing, and yarning. Yet his yarns always seemed to have point, the weight of time and place, of ethical distinctness, for he always managed to pitch his battle well, his strength to the weak.

His finely spun pieces that dealt with adventuring in the tropics under the spell of a big yellow moon—his romancing was all for the ladies, "God bless 'em," he always added. And the tales the man could tell! All set in the dreamy, sublimating warmth of the equatorial line, and all easily within the bounds of probability.

Though, to the men, the old fellow had a sterner side to his nature, a knight-errant side. The same salt-air flavor and suggestion of slapping canvas pervaded his discourse; he was always "luffing" up under some one's lee bow; and all listened in good-natured tolerance—all but Allan Denman.

One day Denman harshly, brutally disputed one of old Dave's exploits, of a time he nearly killed two Spaniards in a knife fight on an anchored, rolling boat loading with tallow and hides from a lighter in San Diego harbor.

Old Dave looked at Denman standing before him, Denman the husky, immaculate, in his faultlessly creased trousers, fancy belt, and silk shirt. The pupils of his poor old brown eyes seemed to enlarge against the whites; something of fire burned in them, as if the flame came up from dying embers.

"I'm lying, heh?" he yelled. "You wouldn't remember it, would ya, ya pink-face swab, if ya stood on an old hooker half full of stinking tallow and hides, rolling t' beat the band, all gaskets loose but the bunt-gasket, sails ready to be set any time in case a wind came, then have a coupla Spaniards jump ya with knives?

"You wouldn't recall it, now, would ya, if ya had t' fight till ya couldn't see, and had to crawl away when ya finished? Lying, hot-air, eh? They didn't think that when they swarmed over from the lighter and picked us up. I got a newspaper clipping in my chest that didn't think that-away. I'll show it to you to-morrow, ya big stiff!"

He did, the following day, while Denman was taking relief to smoke a cigarette. Denman read the faded clipping, and handed it back to him with a strained remark.

But, by the strange implacability of Fate, it occurred to old Dave that he didn't like Denman—though, from the chanty he sung as he went about his work, one would never suspect the dislike.

Helen Rose, how he idolized her! He carried her image in his mind to his little, sea-mementoed room and compared her with the other girl of days gone by, his dream girl. So much alike!

He had heard of some queer theories, something about reincarnation. He was smoking his pipe, working over the tuning-board of a violin he was making. He paused.

His daughter used to have a way of rolling her eyes to express a meaning, a pretty emphasis it was to her soft words; and when she had spoken they would cease their rolling, would appear large and motionless, a sparkle, as if waiting for a possible echo. Helen Rose had the same dominant characteristic. Ah, yes, she called up pleasant recollections. Betcha boots!

Two days later old Dave heard of the engagement. It was as he had expected. The love god triumphed, as he always did.

Blushingly, with soft voice and rolling eyes, she paused at his railing and confirmed the report; and he—well, wasn't he an ex-sailor enmeshed in telegraph wires, afoul of conventions? He, David St. Clyde, whose dog-tired, wistful, velvety-brown eyes always had a twinkle in them for the ladies, "God bless 'em!" and who never by the slightest waver betrayed a trace of pain behind a gallantry!

His old raucous voice boomed his felicitations; he even said something about dancing at the wedding. Then he went back to his dusting, oiling, and wiping. He was sad. There would be a vacuity in the operating-room when she left.

And Denman? If it was only some other lubber, so he could luff up under his lee bow and smile and shake hands and commune with in a way man knows the heart of man. But Denman! Old David mistrusted him.

It was odd, his mistrust.

At most unexpected times it would intrude itself upon him; behind the switchboard, where he would pause in his work and stand silent, inert, and look at Denman working rapidly, adding to the terrific din and roar that was charging the wires that crooned and sang; in his littered room, over his violins in the making! during his walks—always the mistrust of Denman bobbed up in his mind.

That day of the argument, in a second, quick as the snap of a shutter, like a lightning flash at sea revealing a ship in the black of night, Denman's character had been flashed alight to old Dave, and with unerring vision he had glimpsed an ominous something—danger!

One morning they found him, crumpled near the dynamos he had petted and sang to, his lint rag in his hand. One of his old spells had stolen upon him again and had floored him.

After which, for days, his mind wafted. The most absurd, unseamanlike fantoms sailed across his inner vision. At times he was slightly conscious of pain, then he was off again in fantasy, sailing uncharted, mysterious seas; and finally, when he returned to his home port, his littered room, and opened his eyes, he saw he had visitors.

He felt burned out. Yes, that was it. Betcha boots! But the fire was leaving him slowly, stubbornly. It still flickered burningly about his temples—ah, what a relief!

Some one had gently laid a cold, wet rag over his forehead—a gentle hand; it was resting there, and under it, almost psychic, a healing quality came.

His poor old velvety eyes opened wider. In a glance he took in the situation. There were four people in the room, the doctor and sick committee from the Western Empire.

And the hand that had just uplifted from his forehead Helen Rose's! Hers of the operating-room, the living reminder of his cherished dream-girl; lissome Helen, who had a personality that came swarming over him; the girl who was engaged to Allan Denman.

No trace of a tear or pain should appear behind a gallantry. No, sir, by the Lord Harry!

He looked and smiled and muttered his thanks. And if ever gratitude and depth of feeling showed in human eyes, it certainly showed that afternoon as old Dave hunched himself up on an elbow and let his gaze follow her and the rest of the committee out.

He always said he would die like a seadog; that he would never wear out. This last knockdown by no means impressed him as being a forecast of the end, though it took longer this time.

But he would up anchor, clew up all sail, and scud before the wind soon. He promised himself that. Helen Rose, the sunshine girl, would she be waiting in the operating-room to remind him of his daughter? Or had she married Denman and left?

A month and one-half. What was that in a man's life—in the life of an old sea bucko like himself? Absolutely nothing.

On the morning he started for the operating-room to resume his duties, his old body still a trifle weak, he decided the time amounted to nothing. With all his accustomed optimism and a chanty lilting through his mind, he steered a course for the Western Empire, believing he would find everything as before.

The hurrying and scurrying were there, the same din and roar. The contagion of electrical, generative force surged over old Dave as he reappeared on the stage of his workaday life and boomed forth a salutation in his raucous voice.

Yes, things were pretty much as he had left them — his carvings, coconut-shell flower-pots, his tools and lint rags. The same faces passed—but hold on!

By the Lord Harry, what was this? Denman was missing! A strange face sat before the New York wire. Quickly he searched about for another face; then he summoned a clerk.

"Helen Rose, lad, where is she?" he asked quaveringly, the boom in his voice having subsided for the moment.

Probably married and left, it flashed to him

"Quick, lad, where is Helen Rose?"

"Ain't you heard?" the young man asked. "Allan Denman chucked her over a month ago. He got tired of her. Broke the engagement and ducked out—"

"Helen Rose, lad—what became of her?" David St. Clyde asked a second time, hoarsely, a queer expression spreading over his face.

"Oh, she just stuck around for a coupla weeks, just drooping and getting sick," said the file-clerk. "The other girls seemed to shy away from her. I dunno. She just disappeared. They say she's home with her folks."

Silently old David moved back to his dynamos, the queer-evil-portending expression seamed into his wrinkled face, the fire in his eyes flickering again. No more would he dissemble. The world was heartless, inexorable.

This last struck at that which he had been worshiping as a memory, though it was probably better the way it had ordained. There had been no Allan Denman in his daughter's case—

Denman! He drew himself up. His face seemed to twitch. The fire in his eyes had flamed to a dancing fury. His long, misshapen fingers clutched, talonlike.

Where were the old days when the point of a rapier would find a viper's heart for a deed of that kind? Where were the days of the love god he had known, when fair names were kept aloft, fought for, instead of being sullied with impunity—other than the slight inconvenience of a disappearance?

No chanty lilted through old Dave's brain as he sauntered to his room that evening.

Arrived there, he sat like a sick bird in a stupor. In retrospection he saw it all. The singing and crooning of the telegraph wires had enmeshed her with great love for Denman—Denman the great, the talked-of, the viper! Again his talonlike hands clutched.

The vacuity had come. Sad, the *Wanderlust* in him stirred again—a call. He heard it far above the singing and droning of the wires, the hiss of the Continental code.

The big, high-power circuit to Japan had been opened. At Los Pinole Point, a dismal place on the rock-bound coast, 500-k.w. sparks were shooting.

It took a veritable power-house to shoot them from the big aerials. Many motors and dynamos were used. Old Dave responded to the lure of adventure; he answered the beckon of the lint rag.

It was kind of the wireless company superintendent to give him a chance.

"Good, bracing sea air; good food and quarters," he had written to old Dave.

Betcha boots! A place where he could watch the capers of his old love, the ocean; where he could hear a booming and splitting of the surf and feel the tang of sea wind again.

It was a long trip by ferry-boat and stage. He arrived late in the afternoon, as the sun was setting.

With the superintendent who had met him, he stood watching it, looking over the scintillating sheen of the Pacific. Then his gaze dropped to the slopes before him. But a short distance down was the beach.

"Dangerous place," said David St. Clyde.

"Yes," the superintendent answered; "many a ship has pounded to pieces just outside of the reef there. Nothing but the smaller boats come inside."

It was obvious. Before he spoke, old Dave had noted a sloop inside the reef, near the beach. He also noticed that they were just a few miles beyond the Golden Gate

Again the implacability of Fate descended upon him, driving him on, as if he were a force sent to achieve certain and definite results.

Though it did not occur to old Dave exactly in that night—curiosity, it was to him. At the end of his "trick" the first night, curiosity to see the "sending" and "receiving" room of the big circuit caused him to cram his inevitable lint rag in his pocket, light his pipe, leave the purring dynamo-room, and saunter to the little brick house on the summit.

He had been told that only one operator manned the station at night. He would go over and get acquainted.

The windows of the station were alight.

As old Dave crunched along the gravel path he heard the strident, punctuated hisses that were being spread to Japan from the high aerials.

He marveled at it, for he knew the trackless wastes they spanned, those signals that left in the night and in a second caught the light of day in the Orient.

He advanced to the door of the station. There Fate played a bold stroke.

Allan Denman was sitting before a big key of the wireless set, smashing out the hiss of the Continental code!

His back was to the door. While the big helix blued with flickering light, and long, rippling streamlets of bluish electricity danced, ghostlike, on the condenser plates, old Dave stood silent, a dark statue

"By the Lord Harry!" he exclaimed to himself.

Denman, the viper! The debonair, crack operator, at home at a key on land or a shipboard, the idol who lured like a siren, the human monster who had thrown a priceless flower in the dust and trodden on it in his haste to disappear! Denman!

"By the Lord Harry!" old Dave muttered a second time.

The strident, hissing punctuation continued in rasping staccato. Outside was the ocean, the heaving and swelling illimitable —his lass. He had done deeds of the sea before—that time in San Diego harbor, for instance.

He felt himself thrilling, pulsing with the recollection of it and the fact that another deed was about to follow it into the preterit. Nothing but a cataclysm could stay it.

He had the advantage. The man at the key would have done the same to his girl, had she lived and he met her; and it was Denman who shut off the one gleam of sunshine that recalled her so vividly.

Nonchalantly he drew a big jack-knife from his pocket and opened its long blade. Quietly he drew the long strip of lint cloth from his pocket, and carefully bound and tied the knife in the grip of his right hand. He had used that knife before on the sea, and was taking no chances that it would be knocked from the clutch of his hard-veined old hand. Finished, he moved forward very slowly.

To the chair he advanced. He could see the cablegram Denman was sending; then quickly, bellowing, booming again with the tidal tone of his voice, he slapped the operator on the shoulder with his empty hand.

"Get up! Ya! That's it. No ya don't, me fine bucko! Let the chair and phones lay where you've knocked them. Let Japan shoot into the air, an' call an' call an' call, laddie. Said I lied when I told you I fixed two swine once on a rocking old hooker, with all gaskets loose but the bunt-gasket.

"We're all alone here, laddie. Queer things happen midnights on the sea. Get your gear on. You're going back to Helen Rose—betcha boots!"

Denman, his hair disheveled, raked askew when he threw off the phones, white, stared with bulging eyes as if looking at an apparition. Finally he brought his voice from the depths and haltingly pleaded:

"Are you crazy, man? I've business to attend to—no stage until to-morrow."

"Get your gear!"

Old Dave advanced nearer, brandishing his lint-shrouded, ominous hand.

Denman took his coat and cap from the wall.

"Lead off down to the water," St. Clyde ordered. "By the Lord Harry, you're going back to her—now! It all lies with you, me fine swab, as to whether ye want the knife now, on the water, or ever. Depends, mind ye, on how ye behave with that pink, white, an' flabby bulk of ye an' yer muddy brain. Lead off! Thataway!" pointing.

As they crunched down the path and slope, and over the wind-swept rock beach, the lilt of a chantey began once more to sing in old Dave's brain. He could hear the moan of the surf. Here was an episode of the salt water, something that stimulated the blood of him, something that made him feel his congruity with the setting.

They would have to wade out to the sloop. Well, he had stood to his middle in cold water many the time loading from a lighter! A good thing it was a mild night with a star-flecked sky. Otherwise he might not be able to sail the craft. But they were going back. Back to Helen Rose, the living breath of his dream-girl.

And Allan Denman was going to marry her. Betcha boots! He would tell him about that later, on the bosom of the sea, sailing toward the Golden Gate and the bay.

They reached the water and started wading out to the sloop.

It was cold, icily reminiscent of those other brave old days. As he ordered Denman aboard and climbed after him, the teeth of the brine seemed to bite to the marrow of his bones. He shivered and quaked, but was spurred on by his indomitable spirit.

"Man the wheel!" he yelled. "I'll tell ye how t' point her over."

Denman obeyed chatteringly.

Came a slatting of sail and the booming of old Dave's voice giving orders. The sloop quivered, moved, gathered way, caught a tidy breeze, and raced out to sea.

No side-lights; not even a riding-light; nothing but bulk and murk; a scudding shadow, curving toward the Gate, bowing and curtseying, in the grip of the inrushing tide the sloop raced toward the portals of a sleeping city.

From his seat near the rail, old Dave yelled over the moaning whine of the sea, as they dipped and rose and rode the swells:

"You're going to marry Helen Rose when you get to the city. Betcha boots!"

After hours of sailing and watching, when the chill, gray finger of dawn began to mark the eastern horizon, when the swish and wash of white effervescence swirled about them, old Dave knew that Age had caught him; that the brine had bit deep into the marrow of the slender legs of him

He made a false start. They were numb!

Also, he knew the false start and his condition had been noted by Denman. Denman was rushing at him. He upreared to meet the assault of youth.

In his brain flared the battle-fire. The viper! Kill! Kill! He launched a blow with his clutched hand. Soft and flabby! Ah, just as he thought!

Again he struck, but not with as much success. Blow the lad down, but he could fight! Myriad stars flicked back from the night into his vision. The sloop was rocking.

Again a blow. Now he was without lights. His course was dark. On his seemingly petrified legs, his back against the mast, he fought, lashing about, unwilling to doddle out.

Blow the lad — by the Lord Harry, he could hit! The blows were coming amidships with sickening precision. Then he went down.

Pilot-Boat 7, under press of canvas, sighted the sloop, sail down, drifting, bobbing to the caprices of the breeze. They picked her up. Two unconscious, ensanguined men on it bespoke another mystery of the sea. They hove them aboard, trailed the sloop astern, and sailed through the Gate, down the bay to the dock.

Just after the Japanese cook-boy left to summon an ambulance, Allan Denman opened his eyes. The skipper of the pilot-boat was before him.

"Ho, lad!" he shouted. "You're reaching port again?"

"Yes," said Denman faintly, glancing about.

The lint rag was still in place over his left bicep, where he had managed to tie it just before he fainted. The cut was deep there.

"Yes," he repeated, "I'm back again."

"What was the busting, lad, before ye calked off?"

Slowly, deliberately Denman told him every detail from his first meeting with Helen Rose.

There was a slight stir and half cough from the bunk opposite.

"An' the old seadog hounded ye, eh?" the skipper was asking. "But the lass, lad?"

Denman, weak-eyed, weary, looked ahead as if into space.

"I'm going to marry her," he said.

Old Dave St. Clyde, on the other bunk, had just opened his eyes and heard.

"Yes, sir," Denman went on. "I'm going to marry her and be a man. Why, I didn't know what it was to live, fight, and adventure till last night, when I was kicked right out of a mean groove by a

grand old fellow who fought for—just principle—decency's sake.

"Yes, sir; I'm going to marry the girl and be a man." A clang of a bell sounded from without. But old Dave did not hear it.

A smile on his old, wrinkled, olive-colored face, his velvety-brown eyes fixed steadfast as if searching for some one, he had dropped the croon and sing of the telegraph wires and reverted to his old trade of the sea, had quickly and silently cleared for a new port whence no ships return.

HOW WE ARE DOING "OUR BIT."

BY FRANK W. INGRAM,

Engineer, Salt Lake Division, Southern Pacific Company.

HELPING to maintain engines which are now averaging two hundred miles per day by continually inspecting at every opportunity, making temporary repairs and reporting conditions by wire, which can be remedied with minimum delay at next terminal *en route*, thus insuring greatest locomotive efficiency. The locomotives of this division are moving through subterminals on an average delay of but forty-five minutes, which speaks volumes for roundhouse efficiency and organization.

SECOND.—Forecasting trip and figuring on meets with regular trains, and thus guaranteeing the best possible time consistent with safety and economical operation of engines, with tonnage in many cases ten per cent over locomotive rating. The average freight-train speed on this division is twenty-two miles per hour. We have attained ninety per cent of train-load to tonnage rating of locomotive.

THIRD.—Handling air-brake and train equipment in such manner as to avoid damage to equipment and lading, and subsequent delay to trains. Car-lading has increased heavily per car, thus increasing weight of trains.

FOURTH. Instructing a large number of inexperienced firemen in economical use of fuel oil. Firemen are scarce, account of called to colors and unusual business. Fuel oil has advanced two hundred per cent and represents principal item of railway expense.

The war has necessitated our working many additional hours each trip and increased our responsibility a hundredfold, due to supermaximum operating conditions. It has decreased my lay-over home, it has increased my living-expenses fifty per cent; it has removed from my companionship many lifelong friends, many of whom may never return.

But if these but aid in dissolving the usurped Hohenzollern partnership with the Almighty, and abolish the divine rights of kings, ushering in and insuring a fuller measure of democracy, my children and I will feel that this world is a better world and safer world for us, terrible as the war is to contemplate.

BY F. R. PECHIN,

General Superintendent, Chicago, St. Paul, Minneapolis, and Omaha Railway.

FROM the standpoint of an executive officer we have accomplished some results which may be classified as follows:

Urging shippers to load cars to capacity, with view of conserving equipment and train-service. For the first eight months of this year, this amounted to a saving of 7,496 cars in the loading of merchandise alone.

Passenger-train service reduced approximately twenty-five thousand miles per month, or three hundred thousand miles per year, thereby saving crews and engines for movement of troops and government supplies.

All military movements, whether of troops or supplies, are given preferred attention, with view of expediting their movement with least possible inconvenience to regular traffic.

With the Inventors

THE inventor who does not make a fortune from his first invention need not be downcast and worried. The pecuniary side is important to the extent that it provides food and raiment and the means for further experiment That cannot be denied, but it is not the whole story of a man's existence

The inventor who thinks and toils is all the while training his mind. That is something to be thankful for. The search for the right way to accomplish one's ends in perfecting an invention draws out latent capabilities.

The resourcefulness is often taxed to the extreme, and minor inventions are brought out as an aid to the main project .A hundred minor ideas may have to be matured and combined before the central idea, or nucleus, is carried forward to the point of practical completion.

It is this drawing out process that is most helpful in the development of intellect. True education is not merely a pumping in process, although many have made the mistake of thinking so The very derivation of the word education is a Latin expression for drawing out

Absorption of knowledge seems to be a necessity up to a certain point, but it must not take the place of the other process, and cannot equal it in importance. This idea has proved a stumbling block to many a class leader in college, who has shown himself an adept in absorbing knowledge and afterward failed utterly in applying the knowledge practically.

The most wonderful form of education known to man is experimenting It sets one to thinking and then checks up the correctness of that thinking. Experimenting teaches one to plan and devise means for achievement. It points the way into the storehouse of nature's secrets.

The processes of invention have made men from mere boys, molding their minds as the potter molds his clay. Many of the great men of the earth owe their great ness to their inventive training They trace their progress back to their first boyish experiments. The inspirational thinking of such men sprang to life during the perfecting of their first simple inventions.

Invention is the most alluring of all forms of education. It fascinates and holds the attention, and interests one as no recitation ever did or ever will do. It grips a man, and does not let him go until success is attained.

Invention stimulates the imagination, until the inventor sees locomotives in bub bling teapots. Through the curling hot steam he beholds the puffing, pulling engines, and he must have them. He will not rest until they are his to give to the world.

Yes, the inventor's training is an education in itself. It is a model for schools to follow, for it permits the pupil to pursue his natural calling or work for which he is individually fitted. It teaches him to think for himself, and leads him by natural steps into fields of original investigation.

TURBO-ELECTRIC ENGINE.

THIS locomotive employs auxiliary motor-trucks operated by a generator or dynamo that is driven by a steam turbine. The turbine is run either by live steam or by the exhaust from the regular locomotive cylinder, or by a combination of the two methods.

As one of its major features, the present invention involves an improved construction of valves for controlling the supply of live steam to the turbine. A pressure-reducing valve interposed in the live-steam connection maintains a predetermined pressure in the turbine steam-chest or receiver.

Another feature is that there are two or more tenders, the truck-wheels of which are driven by electric motors. This greatly increases the tractive power of the engine, as substantially its entire weight is utilized for traction, and in fact the entire weight of the train may be so utilized if desired

The problem of distribution of weight is thus much simplified. Where the large drive-wheels alone are depended on for traction, they must sustain a large proportion of the weight of the locomotive, and this concentration of weight subjects certain parts to more than their share of the stress and strain.

The tenders are equipped with condensing apparatus, so situated in regard to the water-tanks that there is an abundance of water for cooling the condensers. The water-tanks are connected, making available a large supply of water for the locomotive, an important feature in regions where good water is scarce.

The patent, which is No. 1,242,762, is issued to William J. Bohan, of St. Paul, Minnesota.

IMPROVING THE UPPER BERTH.

THE time is at hand when the traveler will not telegraph ahead for the lower berth, for the upper will be just as desirable, if not more so. In the recent designs, plenty of space, excellent ventilation, and more privacy are among the features.

Between the backs of the seats is a compartment in which are adjustable steps by which the upper berth may be reached, and the occupant can make good use of the compartment for dressing purposes. A collapsible partition makes the lower part of this dressing-room available as a portion of the seating-space in the day-time.

The seats slide back into the dressing-room space, and are thus prevented from being uncomfortably close to each other, an advantage that is readily appreciated by any one who has sat for hours in a cramped position, where the seat spacing has been insufficient.

The construction permits easy access to the upper berth without a special ladder, and with no inconvenience to the occupant of the lower compartment. It is claimed that these advantages and others will enable railroads to sell tickets for the full capacity of the car and produce greater revenues.

A patent covering the construction of a sleeping-car as described is No. 1,242,331, issued to A. P. Deroche, of Ottawa, Canada.

RAILWAY MOTOR DRIVE.

THIS invention aims to provide a driving mechanism for railways, insuring a great reduction of speed between the motor and the driven wheels, thus making possible the use of a motor with as high speed as desired

A worm form of gearing is used, the motor-shaft running lengthwise the truck, and having suitable universal joints to take care of the bending stresses. The careful designing, the inventor claims, makes the mechanism practically noiseless and very efficient.

The form of motor is preferably the electric type, but not necessarily so; and there would be no objection to the installation of a gasoline engine, which could be done without exceeding the limitations of the patent. The invention is particularly applicable to the street-railway type of car, where the low speed at frequent intervals makes the high-speed engine as ordinarily mounted of very little use.

Noiselessness in the gearing can be appreciated by any one who has listened to the grinding gears of the average street car or of even the high-speed electric railway coaches. Noise is not only very disagreeable, but is an indication of lost motion, improper meshing of teeth, and consequent wear and tear beyond the limit of economy.

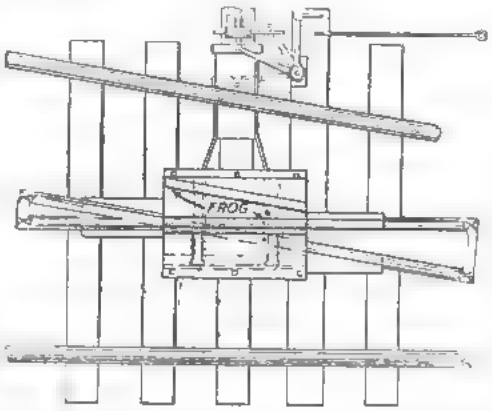
With worm gearing the necessary gear reduction can be obtained at once by few parts in a small space. A reduction of six to one may be readily effected, giving a speed of thirty miles per hour to a car with a motor making two thousand revolutions a minute.

A differential is introduced between the worm gear and the shaft sections, resembling the usual automobile construction. This has the advantage of permitting the opposite traction-wheels to advance at different rates of speed as a car goes around a curve, and lessens the grinding effect of the wheels upon the rails.

The patent, No. 1,240,419, is issued to Charles H. Calkins, of Ludlow, Massachusetts, assignor to the Baush Machine Tool Company, a corporation of Massachusetts.

MOVABLE FROG.

A SWITCH that can be used on either steam or electric roads, and has a movable frog, is the invention of A. L. Vissat, of Herminie, Pennsylvania; patent No. 1,231,676.



FROG, ACTUATED BY BELL CRANK LEVER, MOVES BACK AND FORTH LENGTHWISE THE CROSS-TIE.

The frog moves back and forth lengthwise the cross-tie, and is held in place by bolting the shifting arm in either of the extreme positions. A bell-crank lever is the means for operating the shifting arm.

From the illustration it can be readily seen that the track in the foreground is in proper adjustment for through traffic. If the frog is shifted forward, the side track is ready to receive a train from the other.

Among the claims made by the inventor are simplicity in construction and arrangement, strength, durability, efficiency, convenience in operation, and facility in installation The switch is also said to be comparatively inexpensive to manufacture

Recently inventors have been quite active in designing switches and operating devices of one kind or another. We never know one month what the next will bring forth in the way of economic methods for shifting trains from one track to another.

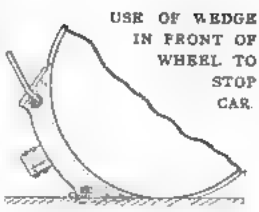
SMOKELESS LOCOMOTIVE.

IN a recent design for a smokeless locomotive, the smoke, after passing through the fire-tubes, enters a smokebox and then passes up through a conduit and back over the top of the boiler into a water-tank partly filled with water, as shown in the illustration.

During its passage over the surface of the water, the smoke is sprayed by means of revolving paddles, and cleansed of cinders before going out the stack. The upright portion of the smoke-conduit does not obstruct the tank-passage, for the tank is the wider, enabling the smoke to pass on each side of the conduit. The paddles can be revolved by any suitable means

The upright part of the smoke-conduit is divided at the bottom to straddle a horizontal pipe, perforated to admit cinders, which can be drawn off by suction. The flooring of the tank slopes toward this pipe, so that the cinders gravitate in that direction and are removed automatically

If desired, the pipe for removal of cinders may be left open continually for discharging purposes, while at the same time the water intake is open, and keeps the liquid at a constant level



USE OF WEDGE IN FRONT OF WHEEL TO STOP CAR.

The invention is by Nykola Petryk, an Austrian, residing at Philadelphia. A patent covering the invention has been issued, and is No. 1,243,214

TRACK AND WHEEL BRAKE.

A WEDGE can be held in front of an advancing car-wheel to successfully bring the train to a stop, and an inventor has devised means for doing this without dispensing with the old form of brake

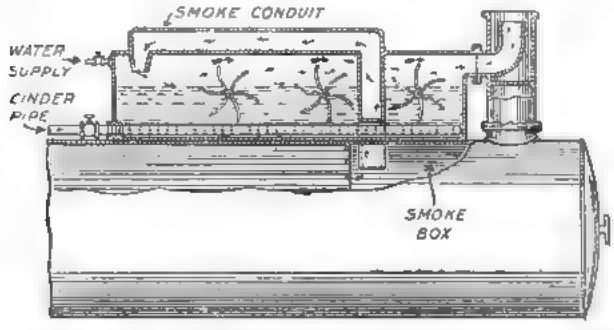
The two systems can be operated either separately or in conjunction.

The wedge is attached to the brake-shoe, which is suspended in such a way that it can be lowered into a position near the track and jammed into the rail by the forward motion of the wheel. The portion in contact with the rail is roughened to produce a firmer grip

To overcome any tendency to derail the train, a flange projects downward from the brake-shoe and acts similarly to the flange on the wheel. In order that the device may operate on a train when it is going backward, the brake-shoe is ingeniously placed in front of one set of wheels and behind the other.

On account of the symmetrical features of the design, the same shoe can be used on both the right and left side. All that is necessary is simply to turn the shoe upside down and it is ready for use on the opposite side. Only one pattern is necessary and the machining is simplified, thus making quantity production possible at minimum cost

The device is patented by E R Worstell, of St Bernard, Ohio, and the number of the patent is 1,243,373.



AFTER THE SMOKE PASSES THROUGH THE FIRE-TUBES IT ENTERS A SMOKEBOX AND IS SPRAYED IN A TANK PARTLY FILLED WITH WATER RESULT—THE SMOKELESS LOCOMOTIVE

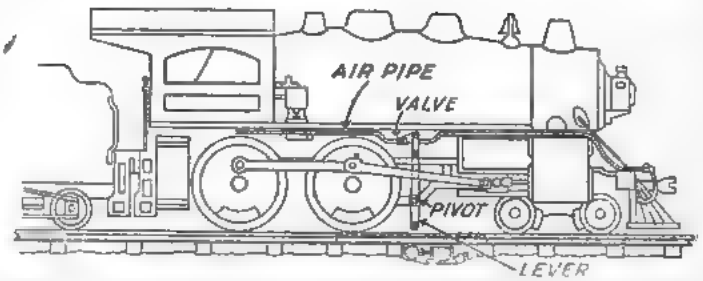
AUTOMATIC TRAIN-STOP.

AN automatic train-stop illustrating the principles that inventors have been seeking to apply for some years back is the invention by C. W Wilson, of Berea, Ohio, patent No. 1,210,246.

The brake air-pipe has a valve that is normally closed, but which when opened bleeds the pipe line and operates the brakes. This valve is worked by a lever, the lower end of which is adapted to contact with a ramp placed beside the track, near a signal-tower, switch, or other point along the route.

The ramp is raised to the tripping position by a cam mounted on a shaft having a crank-arm connected by a link with the core or plunger of a solenoid or electromagnet. The current for the electromagnet is preferably a part of the signal circuit at a switch or semaphore.

Thus, when a switch is open or a semaphore-arm is at the danger position, the ramp rises into the tripping attitude and effects a stoppage. The apparatus may be used in connection with any of the standard electrical signal systems, and can be easily and cheaply installed.



WHEN A SWITCH IS OPEN OR DANGER SIGNAL DISPLAYED, RAMP IS RAISED TO TRIP LEVER ON ENGINE; LEVER THEREUPON BLEEDS THE AIR-BRAKE PIPE-LINE.

The operating-valve is located at a level not lower than that of the train-pipe of the air-brakes, and thus prevents the accumulation of water from condensation.

"WHY?"

BY ROBERT D. LUKENS.

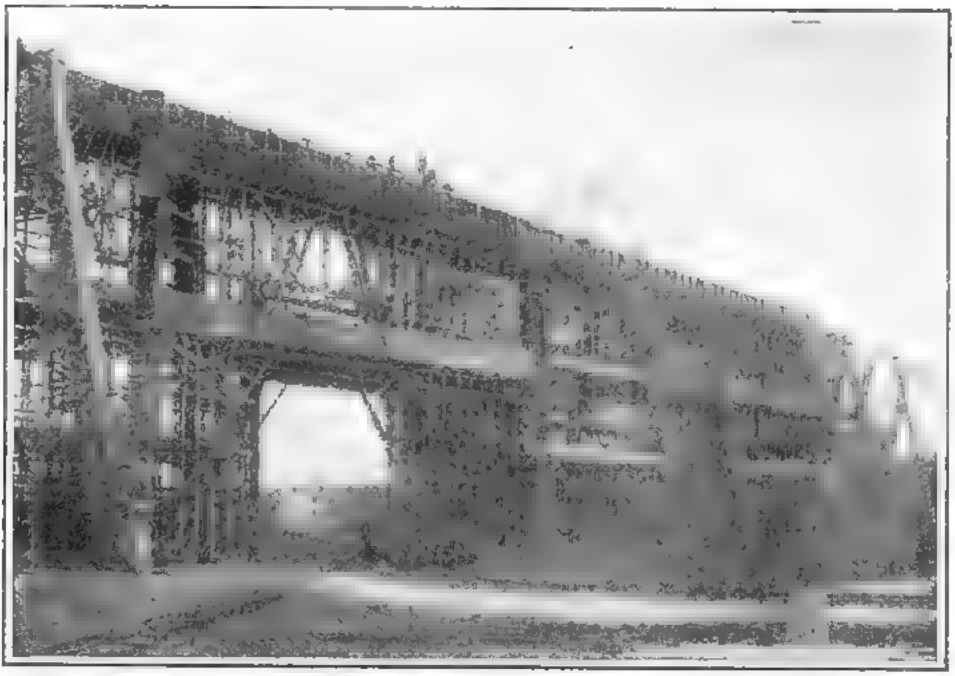
THE eternal secret's discovered—
No more will the Nile winds sob
Over the age-old riddle;
The Sphinx is out of a job.

The question that rang down the ages,
From Egypt's cloudless sky,
Has been answered by the railroads
In the official query, "Why?"

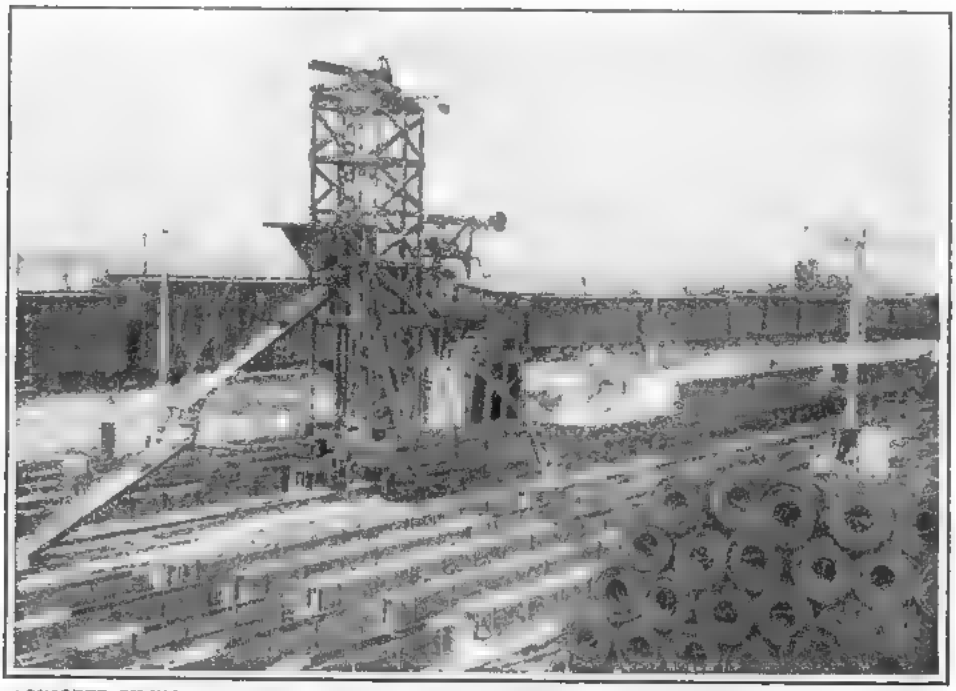
In the past a kick was followed
By a letter, long and dry.
The man overhead now turns down the page
And tersely scribbles a "Why?"

The missive is sent on its journey,
Descending from man to man,
Till it reaches the guilty party
And culminates in a "can."

Somewhere a grave is calling
For a monument proud and high,
To the official buried beneath it—
The man who first wrote a "Why?"



FORM WORK FOR AN ELEVATED TRESTLE INTO WHICH THE CONCRETE IS POURED STRUCTURES OF THIS TYPE ARE BECOMING INCREASINGLY COMMON ON AMERICAN RAILROADS, AS WELL AS IN BRIDGE CONSTRUCTION GENERALLY.



CONCRETE PILING FOR USE IN THE NEW BRIDGE ACROSS THE OHIO RIVER WHICH THE CHICAGO, BURLINGTON AND QUINCY RAILROAD HAS ERECTED AT PADUCAH, KENTUCKY. THIS ROAD IS ONE OF THE LEADERS IN MONOLITHIC CONSTRUCTION.

FIREPROOFING THE RIGHT-OF-WAY.

Wooden Structures Are Giving Place to Concrete Which You Can Buy in Handy Packages to Take Home.

BY J. W. GREENBERG.

EVERYTHING concrete but its rolling-stock.

That seems to be the ambition of the American railway to-day, judging by the increase in monolithic construction all along the right-of-way. Bridges, culverts, stations, fence-posts, telegraph-poles, piers, retaining walls, abutments, train-sheds, platforms, docks, coal and sand stations and a dozen or more types of railroad structures are now being made of concrete.

Even in ties the stone substitute is beginning to make inroads.

The why of it all is simple enough. Railroad engineers of to-day are building for the future. Structures of all kinds must be built to last, and concrete solves this problem.

But there is another factor, possibly even more important than permanency. It is the elimination of the fire danger, with which railroad builders have always had to cope.

Fires have cost the railroads of the United States millions of dollars, and it is the desire to put an end to this great waste that has largely influenced roads to adopt as far as possible a fire-proof substance in its construction work.

Concrete has another big point in its favor. It is cheap. Structures of this substance are being manufactured to-day for as little as, and in some cases less than, similar ones of wood. A fence-post, for example, made of a good wood, costs from forty to fifty cents. A concrete post can be turned out for less than twenty-five cents. And the concrete post, besides being fireproof, will in all probability last even longer.

However, the latest and perhaps the most interesting, development in concrete construction for the right-of-way, which has won great favor among railroad men, is the handy, pack-me-up-and-take-me-home way in which they can provide the stone equipment.

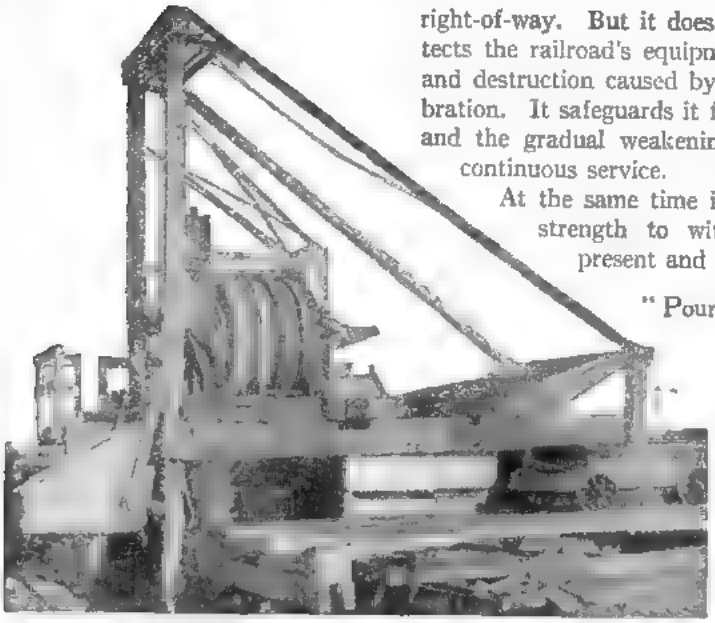
The Latest Models Ready to Wear.

Let us say that a road needs a dozen small waiting-stations, of the type shown in the picture, or watchmen's shanties. Instead of sending men all along its line to build them, carrying lumber and other supplies, it simply orders so many ready-made buildings delivered to the sites desired, and the job is done.

But that is not all. Even large bridges, culverts, and platforms are purchased in the same way, and transported on flat cars from the manufacturing company's plant. And all that has to be done at the place of installation is the actual erecting. In one of the accompanying illustrations will be seen a huge slab cast with reenforcing rods which was built for a flat railroad bridge and shipped on flat-cars direct to the site of the bridge.

Building railroad equipment in this ready-to-wear fashion is more than merely convenient. It is possible by this method to standardize many products and thus effect a considerable saving in the cost of manufacture.

For instance, at one of the concrete plants of the Chicago, Burlington and Quincy Railroad a force of twelve men can,



A CONCRETE MIXER MOUNTED ON RAILS, SO THAT IT CAN BE MOVED READILY TO ANY PART OF THE YARD.

in a year's time, turn out 50,000 fence-posts, 300 bridge-slabs and 10,000 feet of platform curbing, besides enough watering troughs to supply the road's needs west of the Missouri. And the Burlington route has three large plants of this type—at Galesburg, Illinois; Hannibal, Missouri; and Havelock, Nebraska.

Concreting effectively fireproofs the right-of-way. But it does more than that. It protects the railroad's equipment against deterioration and destruction caused by the elements and by vibration. It safeguards it from corrosion and decay, and the gradual weakening caused by severe and continuous service.

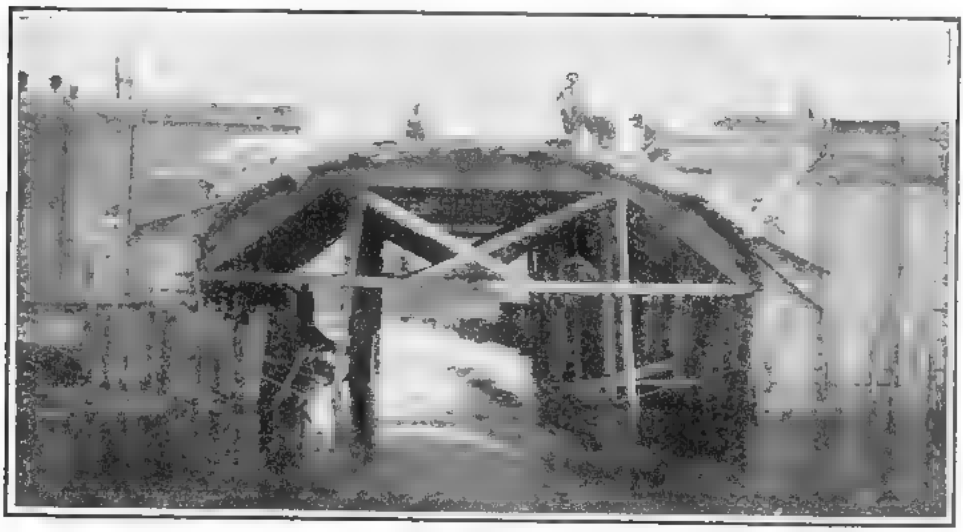
At the same time it possesses the necessary strength to withstand the pressure of present and future traffic.

"Poured Bridges" Coming to the Front.

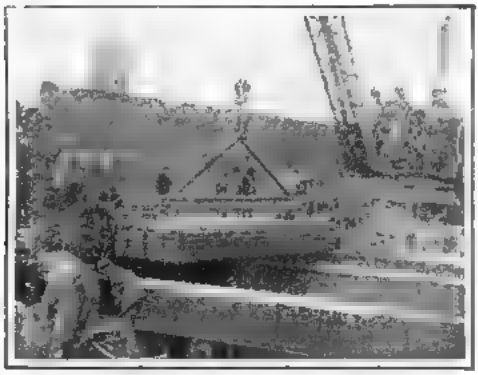
From the standpoint of the railroads the most important of the many uses to which concrete has been adapted is in the building of bridges, and it is an unusual journey nowadays that will not carry your train over at least one of these fireproof structure, now so popular.

A bridge of concrete has many advantages. It is proof against tornadoes and high water. It requires very little care or maintenance.

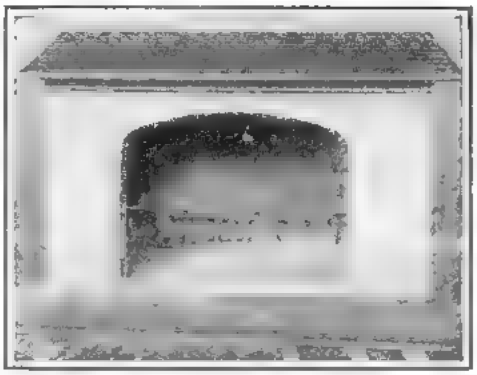
And, while a similar structure of wood will last about nine years and one of steel from thirty to forty years, the reenforced concrete bridge will last almost indefinitely,



SHOWING THE FORMS OF A SMALL CONCRETE RAILROAD ARCH BRIDGE IN THE COURSE OF CONSTRUCTION.



PRE-CAST SLAB WITH REENFORCING RODS FOR A FLAT RAILROAD BRIDGE WHEN HARD IT IS SHIPPED ON FLAT-CARS TO THE POINT OF INSTALLATION



ONE OF THE MANY SMALLER PIECES OF CONCRETE EQUIPMENT WHICH CAN BE MOLDED AT THE PLANT AND SHIPPED, READY FOR USE, TO ANY POINT ALONG THE RAILROAD

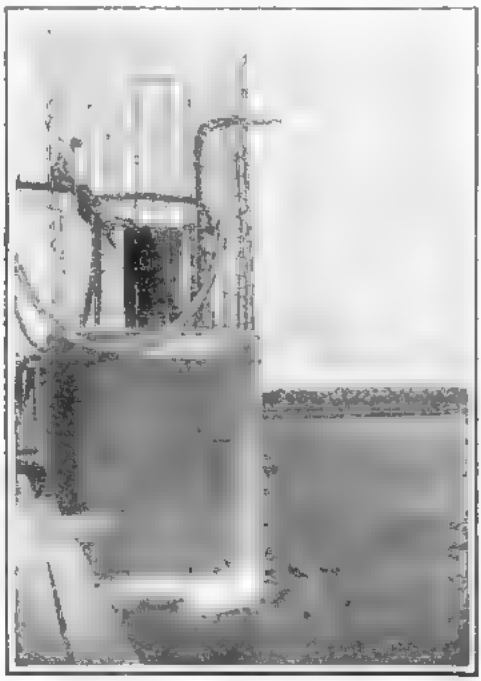
for it grows stronger with time, and its life is measured by ages rather than by years

The passenger, too, has rather a better time of it riding across a concrete span. The excessive vibration is eliminated and the disagreeable noise of the train rumbling over a wood or steel structure is unknown, or at least greatly reduced

Track is easily maintained on a span of this sort because ordinary ties and ballast take the place of the more expensive sleepers of a steel bridge.

An interesting illustration of the use of concrete in bridge-building is the track-elevation work undertaken by the Chicago, Burlington and Quincy Railroad in Chicago, where subways were formed by a number of reenforced concrete girder bridges. These are notable because they are extremely large and because of their

AN ABUTMENT OF THE BIG STONE BRIDGE OVER THE OHIO AT PADUCAH, KY. EITHER PLAIN OR REENFORCED CONCRETE MAY BE USED



A STRIKING VIEW OF THE SINKING OF A CAISSON BY MEANS OF COMPRESSED AIR IN THE PLATTE RIVER, AT YUTAN, NEBRASKA

capacity and method of construction, as well as their extreme size.

The essential features consist of reenforced concrete columns and cross girders, cast in place and carrying reenforced deck slabs. These slabs were molded in sections away from the bridge site and when properly cured were transported on flat-cars and set in place by a wrecking-crane. After being thoroughly waterproofed the ballast and track were laid directly on these slabs.

The slabs were built along both sides of a switch-track in one of the railroad yards near the city limits and after curing ninety days were picked up by a locomotive crane, placed on the cars and hauled to a convenient storage place, where they were piled until required at the bridge site.

Each slab was built in a separate form, and after being cast was wet thoroughly every evening for two weeks. Then waterproofing compound was used to seal the joints between the slabs, thus making the whole bridge floor water-tight.

Trestles, Too, of the New Material.

Trestles of every class as well as bridges are being built of concrete in increasing number. While the cost of this type is greater than that of the timber trestle, the difference is more than offset by the temporary character and danger from fire of the latter design.

And as compared to steel construction, reenforced concrete is generally cheaper and possesses the additional advantage of being free from constant inspection, painting and general maintenance.

Few railroads have taken up monolithic construction to as great an extent as the Burlington route. Among other things, this road is changing over all the wooden pile trestles on its line.

One of the longest and highest of concrete trestles is the Richmond and Chesapeake Bay Viaduct, of the Richmond and Chesapeake Bay Electric Railway.

This structure serves the electric railway line with an entrance to the city of Richmond, Virginia. It is built of reenforced concrete and is 2,800 feet long, ranging in height from 18 feet at either end to 70 feet at its highest point. The viaduct was designed to carry a 75-ton car.

At Havelock, Nebraska, there is a huge concrete plant, maintained by the Burlington Railroad, which may be taken as a typical example of a large up-to-date works. The factory occupies a space of about five blocks long and some sixty feet wide. Fence-posts exclusively are made in one of the frame buildings, while another is devoted solely to the manufacture of concrete water-troughs.

Weigh Up to Twenty-Five Tons.

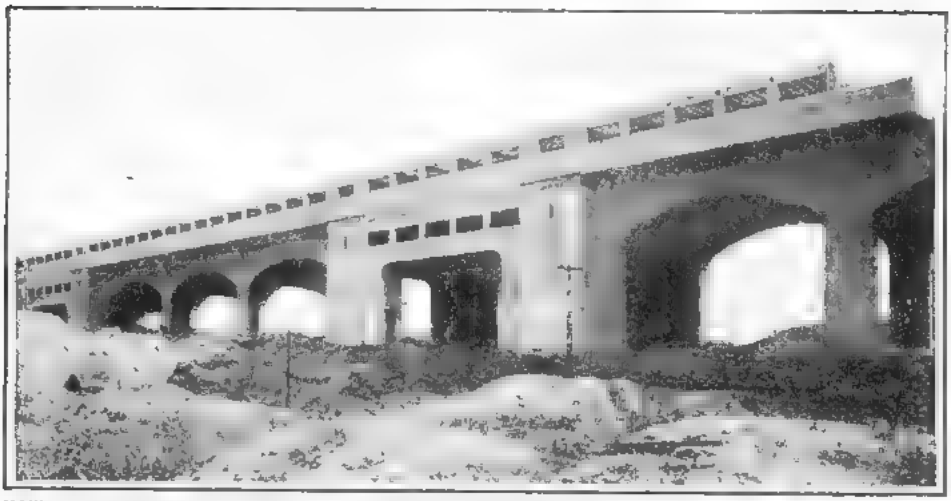
Reenforced slabs and other heavier equipment must be made out-of-doors because of their size. Running on a railway with one rail at each side of the concrete yard is an overhead crane that extends over the whole plant. This facilitates the loading onto the flat-cars of the heavier pieces, some of which weigh as much as twenty-five tons.

Extending across the line of molds, and running on rails at either side, the concrete mixer, which is shown in the photograph, stands on a platform. This machine is used in almost all outdoor work and is so mounted in order that it can easily be moved about from one part of the yard to another.

A special concrete mixer has been provided for the manufacture of the water-troughs. From the building set apart for this purpose, little cars, carrying the trough molds, run on narrow-gage tracks out to the yard. Everything in the process is mechanical, from the mixing of the concrete to the final loading and transportation. And the trough made of concrete is a vast improvement over the old wooden trough, particularly because it is a more sanitary drinking-basin for cattle in transportation.

Concrete Prevents Fires.

At this plant, too, almost all the fence-posts used by the road are manufactured, the work being done with a remarkable speed and uniformity by an especially designed machine on the top of which is a huge funnel. By means of an endless chain, to which are attached very small



HOW DIGNIFIEDLY ORNAMENTAL A CONCRETE STRUCTURE MAY BE MADE CAN BE SEEN FROM THIS PHOTOGRAPH OF THE ELEVATED RAILWAY STRUCTURE ALONG THE QUEENS BOULEVARD, LONG ISLAND CITY, NEW YORK.

buckets, the concrete mixture is carried to the top and poured into the funnel. A revolving holder below contains the fence-post molds, which pass under the funnel in rapid succession, are filled, and are then carried off to harden.

Destruction by fire along the right-of-way, once a source of terror to all railroad men, is gradually being eliminated. Wooden bridges are going fast, and concrete and steel structures are taking their places.

The railroads in this respect are following in the footsteps of the farm, the home, the factory, and the highway.

Concrete fence-posts are being adopted everywhere. And railroads generally are beginning to realize that the best way to fireproof their rights-of-way is to use an increasingly larger amount of concrete.

A THIRTY-FOOT CULVERT OF CONCRETE WHICH IS TYPICAL OF THE EFFORT ON THE PART OF THE CHICAGO, MILWAUKEE AND ST PAUL TO FIREPROOF ITS RIGHT-OF-WAY THE BRIDGE IN SUCH STRUCTURES IS BUILT IN BEFORE FILL IS MADE

HOW WE ARE DOING "OUR BIT."

BY JAMES McNERNY,

Trainmaster, Chicago, Rock Island, and Pacific Railroad Company.

THIS is a producing division, and its greatest commodity is coal, and many of the mines are not equipped with box-car loaders, but recently the coal traffic has been so heavy that it has been necessary for them to load box-cars and load them heavy. The cooperation of the mine people was asked and was given cheerfully, and they are now placing a man on the inside of cars shoveling the coal back, loading the box-car to the limit and getting every pound possible in each car, promptly billing their coal.

Another move made was not placing cars for local loading on Saturdays, having the locals clean up all empty cars and move off of the division and avoid having cars standing idle over Sunday waiting to be loaded. This increased the car-miles and furnished more cars to take care of the local loading beginning Monday and ending Friday.

Care was exercised to see that all equipment was placed where the greatest efficiency could be obtained. For instance, steel-underframe flat cars were sent to the lumber districts for loading piling, stringers, etc., which ordinarily required two cars, using one for the trailer, the shorter wooden frame flat-cars were used for local shipments, which answered the purpose as well. In all cases where we had a trailer or idler going with a load, we cut out the idler and endeavored to get another load going in the same direction, which would answer the purpose of the idler.

No cars were held for prospective loading, but close work was exacted between the agents, yardmasters, and car distributers, and no car was used for lumber, posts or wood loading unless the shipment was on the ground ready to put into the car.

The shops, storehouses, and freight-houses all worked together and made one car do between them, where ordinarily two and three cars were used. When cars were in bad order care was exercised to see that the material was taken in with the car, and the trainmaster in going over the division kept close watch of all car material and had section men ship material that was picked up along the road to car foreman in order to get the car back in service.

Lots of attention was given to journal-boxes in order to reduce delay due to hot boxes. Trainmen were instructed to save the old waste so that any babbitt that was in it might be reclaimed.

Cars were so distributed that the big cars could be loaded to their capacity, as near as possible, and the small cars moved to where they could get a load to their capacity. For instance, sixty-thousand capacity box-cars would hold their capacity in gravel, rock, coal, etc, where they would not hold their capacity in such commodities as posts, ties, firewood, etc.

The organization recovered all of the coopering-paper, and at one point shipped in one thousand pounds of this coopering-paper to the supply house, most of which was used again, thereby conserving the supply to that extent. At the terminals, the carmen gave every assistance in recovering grain-door boards from the empty cars, which gave us a large number which we were able to ship to the grain-fields for further use.

Mileage of engines was watched closely, and when they fell below a certain point they were tied up. Engines were run over two divisions in order to save coal and the expense of turning them at terminals.

Switch-lists were consolidated. For instance, storehouses and shops reported their work to be done on one list instead of making separate switch-lists, placing all of the switching on storeroom lists This helped the foreman in that while he was doing one job he possibly could place cars that he already had hold of without making an extra move which would have been necessary had separate lists been made for each department.

POP GIVES THEM THE TWO BLASTS.

BY JONATHAN GOOD.

Johnnie Didn't Lose His Smile, Even After He Lost His Girl: But There Came a Time—

JOHNNIE HARROD was born with a smile that not even teething and tummy-ache could wear off. It was like the shine on your grandmother's kettles.

He grew up right under my eyes, and before any of us realized it, he was out of high school and working on the railroad. He started in chasing cars down in the yards, but his hankering was to sit on the right-hand side of the cab, and I knew, from the way he'd made the teams during his school days, that he'd get what he wanted on the railroad—if given time enough. I kept joshing him from time to time as I would run across him in the yards

"Any nearer the cab?" I'd say to him.

Quicker than the lightning he'd come back at me:

"Sure thing. I learned to keep enough water in the tea-kettle last night," or some such foolish thing.

Then one day I saw a chance to get him with me. I was mighty tickled when he got his ticket to fire for me on old 65. His six feet two, over on the other side, made me feel comfortable, and the easy manner in which he'd keep up the old pointer on the steam-gage gave me a little look-in on his strength and skill.

He could see a blessing in anything. I remember once how we straddled a switch; Johnnie was shaken up some, but he was thankful we hadn't gone to Kingdom Come over a bank.

Firing on the Chester and Becket, with its steep grades, showed up a man, and the strain on most people was so great that either their good side or their bad side stuck out all the time. Johnnie liked his work, though, and he improved wonderfully.

He kept our crew cheered up, no matter whether we were behind a plow ramming cab-high snow-drifts in the Big Ledge, or pulling a heavy load up from the quarry road when the thermometer registered ninety-eight in the shade.

So I was some surprised when one day he came to the roundhouse and shuffled right by all of us with just a little nod of his head, instead of stopping to guy a little as he usually did.

Evidently something had gone wrong with Johnnie. The old smile seemed to be working full blast, but somehow it made me think of Doc Rivenburg's when his ball-team is losing a game to our handed-down rivals, Huntington, the bums. Something like a wooden Indian's, with about as much feelin' in it.

All that day I tried to draw him out, but I couldn't get a rise. Just "yes," and "m-m-m" was all I could get from him. To soften him a little, I had him come over on my side frequent and take the old girl, and he'd delight in doing it.

He'd gabble all day about railroading, too, but the minute I'd edge around from that, he'd let his smile talk for him. And he got by with every one but me, but the old man was wise that something was eating him, even if he didn't know what it was.

I thought he'd get over it, but he was hard hit, and after about four months of this grim raven stuff it began to get on my nerves. I went into the Union one night when I was down-town, where Johnnie was a top-liner in the gym, and inquired casual-

like if he was around, but all I found out was that he hadn't been there for a long time.

This looked bad, for when a man like John begins to forget his physical condition, he's given up some. I happened to see on a bulletin-board a notice of a strangling-match, and I thought I would buy a couple of pasteboards, for Johnnie used to be keen for wras'ling and boxing; but the next day when I gave him an invite to go with me, he only grinned sheepishly and said he'd kind of got over those things.

That made me mad, and I lit into him and told him what I thought of him and his ways. He took it calm, and said he didn't blame me; but later I found him round back of the coal-trestle looking way down in the mouth, and the coal-dust was streaked all down under his eyes.

About a month later Bert Whittemore, our brakeman, jumped off the forward end one day to run down ahead and let us make a flying switch, and he turned his ankle so bad that we had to help him home with a broom for a crutch under each arm. Of course, in a way it was coming to him for breaking the safety rules; but all the same it upset us, you can bet, for work was heavy, and we prided ourselves on having the best crew on the hill.

I asked Clate Biggs, the station agent, to slip it over the wire to Springfield to give us the best shack they had. Excuse me for laughing, but Hulbert was his first name. Hulbert Smithies! Some name for a rail-jumper! But in spite of it he was built for hard work like that on the hill.

I took him around to show him old 65, and just as we got to the side of the cab, Johnnie climbed down. Smithies stuck out his hand.

"Hello, John," he said.

Johnnie started to speak. Then he stood still, looking right at Hulbert, and I saw him bite his lip and his face grew white. Then the old smile struggled through, but he turned away quick, without a word.

Hulbert looked at me, red to the hair. I stood like a stoughton-bottle for a minute, gaping from one to the other, and finally I wised to the fact that the men knew each other. Then, as if nothing had happened, I climbed into the cab and asked Hulbert up, too.

"Here's the old girl," I said. "She's a peach, too. We went to Becket once in eighteen minutes—a mile a minute. And with you and Johnnie," I went on, looking at him out of the corners of my eyes, "we can do it again whenever old invention's mama yells at us."

Hulbert broke in:

"I suppose you saw John and I weren't very loving. I suppose it's my fault, too, but I was lucky, and he wasn't. That's about the size of it."

"Uh-huh," said I, wondering all the time.

"John knew Alice before she moved to Springfield. You know, Alice and her sister Marguerite lived near John all the time they were teaching school here in town. They were pretty chummy, and Alice has told me she felt they would be hitched some day, but something came up to make one of those fool rows, and well—I met her just then; and we are married now."

And then I knew what had hit Johnnie so, and I understood at last the soft, far-away, cowy look I had caught in his eyes at times when he hadn't known I was looking at him, and I knew then for sure that smile had had the blower turned on under it. My old heart gave a sudden twist as if the rail was greasy, but I turned to Hulbert as if the news meant nothing to me.

"I don't know as I blame him for being sore," I said slowly, "but I don't see that it can be helped."

Well, I puzzled over it some, you can bet, and I lay awake half that night thinking it over. We had got along all right that day, although I was looking all the time for one of them to start something. It would have been some scrap, too. They both stuck to their knitting, though, for each was proud of being a good railroad man, but I was afraid it wouldn't last.

The next day we were in on the siding in front of the station, killing an hour, for Hulbert wanted to be on hand when No. 6, the express, pulled in, as Alice and Marguerite were going through on it. They'd been out in York State, somewhere. I was half asleep in the cab when *bang!* the door

of the station opened and out rushed Walter McGee, the operator, waving a yellow message. He jumped across the iron and scrambled into the cab.

"No. 6 is wrecked!" he yelled. "She just dropped through bridge 246. Hustle up! And slow up at the crossing for the doc."

That news meant trouble. I whistled for the switch, and we slid out. John had a full head of steam. As we started, Hulbert swung on to the cab-step, his face gone dead white. We picked up Doc Shepherd and several would-be helpers at Nolan's crossing, and then I opened her up.

The old girl never worked smoother. I had her hooked up close, and she just purred as we swayed along. Bridge 246 was on the edge of Becket, eighteen miles up the line, and we streaked to it. The telegraph poles were a blur, and we breezed through Middlefield with just a shriek and a sudden roar, as the echo of our drivers came back from the station.

As we swung around the last curve and straightened out for the final stretch, we could see a crowd of people lined up on both sides of the track. We dashed up, and I put on the air, hard.

Johnnie and Hulbert and the doc leaped off and ran up to the edge of the river. I didn't leave the cab, but from where I sat I could see that the engine and the baggage-car had toppled into the bed of the river and lay clear across it.

The first coach had slid off in on top of them, and another was standing with its nose down on top of the mess, the other end sticking up in the air, the trucks still on it, as the neck and head of a snake rears when it hears something coming.

I could see it sway, too, when a particularly strong gust of wind caught it, and I wondered how long it could balance there in that way. I heard some one say that every one had been helped out, although some were pretty badly hurt, and I could see them sprawled around on the grass, with Doc Shepherd fidgeting around them.

Then I heard a yell off to one side, and I turned to see what was the matter. There stood Hulbert on the bank near where the upended car was teetering back and forth.

He had both hands out toward the bottom of it, and I followed his gaze, but I couldn't make out anything that I hadn't seen before. Then I saw Johnnie come up behind him, and after a second's look, he started on a run for the engine.

His face was set and grim. For the first time that smile of his had worn off. As he drew near I heard him yell to me for the ax. I handed it over to him.

"What's the matter?" I asked

"Oh!" he blurted out, and I could see his lips were drawn and tight, and — I wouldn't have believed it if I hadn't seen 'em—tears were leaking big as peas from his eyes. "Alice is down there."

I scrambled from the cab, and by the time I got to the bank, Hulbert and Johnnie had slipped down to the bottom and had run out across the half-submerged engine and cars to the very bottom of the snake's neck, as I mentally called it then. I saw them standing there, and standing there, arguing with each other, and I saw Johnnie pointing down to where the car stuck in the mess, and then I saw him point upward where the unsteady mass towered shakily.

"Now what's the matter!" I thought.

And then Hulbert, evidently convinced by Johnnie's gab, turned and came slowly away across the cars and the engine to the shore. I slid down the bank as fast as I could and worked my way over to where he stood.

"John tells me—" I hesitated. "Is—she—"

I couldn't finish, but Hulbert saw what I meant, and he said, with little jerks, his eyes all the time fastened on the other side: "No—at least she's alive—but but —her arm—"

And then his lips worked so that he couldn't say anything more, and I turned away and looked over to the other side where Johnnie was. He had broken away a few boards and had bent down and was talking to her. She was lying there, looking up at him, and as I watched, for all the pain that must have been hers, she reached up with one hand and patted his face just as I've seen a child do many a time when it has been put to bed by its mother.

And then he straightened up and commenced to sliver away the beam that was holding her. Her arm was held fast, and as I watched Johnnie slice a little wood off one side of the beam, and then a little chip from another part, I saw why he was working so carefully. By some chance, the beam that held her also served as a sort of support for the car looming above, and then I realized the tremendous risk Johnnie was running.

"Holy smoke!" I thought, and my mind was doin' flip-flops inside my nut. "If he don't chop easy, or if a wind comes up, it's the fast roundhouse for all of them. I don't wonder he isn't smiling."

But I didn't believe anything would happen to Johnnie. I had known him so long from the time he was born, and he seemed like my own son to me.

I felt as if I must go out and help him, but then I realized that that would be a tomfool trick, and that I would only make it more dangerous for him.

And by that time he had chipped away all of one side of the beam. Every few seconds he'd glance over his shoulder and I knew he expected to see the whole thing coming down on them. But I knew, too, that he was not thinking of himself.

Finally Johnnie laid the ax down carefully, as if he was afraid even to jar the car a trifle, and then he stooped and gave a little tug, and I could see that Alice was free. He reached down and picked her up, very gently. I thought he was going to carry her to shore. I wish to Heaven he had!

But the path along those cars was narrow, so he let her down on her feet. She stood for a long moment, limp as a wilting squash-vine, and Johnnie's arm was about her.

Slowly she reached up with her one strong arm and drew his head down until his eyes were level with hers. Then she kissed him. Even from where I was I could see the tears shining on their faces.

They stood that way for a minute; then she turned toward the shore and crept weakly along the tops of the cars, while Johnnie stood there watching her go from him, a look on his face as though he had just saved a million silver boys and had lost them again.

I had just started to walk toward the engine when I heard a snap; a sharp crack, like a big match-safe shutting, and I looked around just in time to see the big wavering car crumple up and crash down on those below, burying poor Johnnie beneath it. The support wasn't strong enough after all.

I heard Alice give one gasp and then she just shriveled into a heap on top of the wrecked engine. I am not a ninny, but I felt sick all over, and as I turned away I saw Hulbert bend over her.

But a sudden roar from the crowd lining the bank jerked me around again. There in the water was Johnnie's head bobbing along, and my heart gave a bound as I saw on his lips a ghost of the old smile.

Instead of being crushed, he had leaped into the water under the side of the car that was resting in the river bed, and by some miracle the falling mass did not touch him.

Johnnie was played out—so were most of us—and I expected he'd be more down in the mouth than ever, but the next day he turned up with his old grin covering half his mug. And it wasn't forced, either.

I could see that, and it puzzled me a little, too, but I laid it to some sort of that high-brow "debt-of-conscience-paid" stuff. I wasn't particularly surprised when he asked whether I'd mind if he applied for a few days off, for I expected he'd need a rest; but I had to kid him a little.

"Sure not," I replied; "but what's up?"

"Oh, I thought I'd like to take a little trip to the Falls," he stuttered, rather red in the face.

"That's a honeymoon place!" I said, insinuating. "Who's the jane?"

"Oh, I know it sounds like Gil Anderson's fairy-book," he returned, his eyes glistening, "but it's that super-Mikado who was caught down in that car at Bridge 246."

Say, shrapnel never'll crack me on the bean worse than that, and I didn't need any Henry Walthall stuff to register surprise, but I couldn't believe Johnnie, even if he had risked his life for her, would do such a thing as to steal another man's wife.

"Holy smoke!" I gasped. "You can't mean Hulbert's wife!"

Johnnie's grin expanded.

"That wasn't Alice," he said. "That was Marguerite, her sister, who was in the car. Alice decided to stay another week out at Hartsburg, so she missed being slid down the bank."

"Huh!" I grunted. "I thought she didn't look quite like Alice, but I was too darned excited to think much about it."

I turned away to hide my glad feelings, but Johnnie grabbed me by the arm, his teeth showing like a Cheshire cat's.

"Tell me, pop," he said. "Do—I—we—get your two blasts for the Falls?"

And then I couldn't help grinning myself, and I had to yell:

"Sure thing! Or to Frisco! Or anywhere! And — and — bless you, my children! Bless you!"

It seemed the only thing I could say.

HOW WE ARE DOING "OUR BIT."

BY F. N. TINSMAN,

Superintendent, Chicago, Rock Island, and Pacific Railroad Company.

WHEN the United States entered the war, I immediately began giving increased attention to the conservation of equipment and the prevention of loss of food products and further economies in the operation of this division.

Some time ago I made a trip over the division and talked to every business man in our towns that I could reach relative to the car situation. I have urged on merchandise shippers the holding over of shipments so as to get full-capacity cars. I am advocating twice a week service which will enable us to make more set-outs, thus reducing road overtime of train-crews, reduce damage to goods account less handling, heavier loading of cars, thus giving us more cars to load, reduced empty-car miles locally and saving on the fuel pile.

Have also made a special effort to eliminate heavy loading of stock shipments, which always results in dead animals and cripples—a direct loss of food products and a maker of claims.

This year I sent an expert cooper over the grain-loading territory to call on all elevator men as well as our own employees, explaining the requirements of a good grain-car, and the methods to be used in preparing cars for their shipments. The results obtained have been far beyond our expectations.

In conclusion I want to say that all the employees of this division seem to be fully alive to what is required of them and are on their toes to assist us, but I am sorry to say the public is not doing so well, although there seems to be a gradual improvement, as our employees continue their educational efforts, explaining what we are trying to do to assist the government in these critical times and how they can help us in these efforts.

BY H. HOLDER,

Locomotive Shop Foreman, St. Paul Shops, Chicago, St. Paul, Minneapolis, and Omaha Railway Company.

IN the capacity of locomotive-shop foreman, I am seeing that no material is wasted; that all usable material is utilized, that autogenous welding is used to the best advantage, to weld and make serviceable many parts that would otherwise have to go to the scrap-pile, thus saving new material. I am keeping the locomotives under my care in the very best possible condition for service, which will aid in the general traffic as well as in the movement of troop and munition trains, for with the motive power in good condition delays will be eliminated, traffic moved faster and car-shortage reduced.

HELP FOR MEN WHO HELP THEMSELVES.

NUMBER 89.

THE WORLD'S LONGEST NON-STOP RUN.

BY W. J. PARRY.

THE GREAT BEAR IS THE ONLY LOCOMOTIVE OF THE PACIFIC TYPE IN GREAT BRITAIN AT ONE TIME SHE WAS USED ON THE FAST NON-STOP RUNS, SUCH AS THOSE DESCRIBED IN THIS ARTICLE

BEFORE taking the readers of this magazine over the two hundred and twenty-six-mile stretch between London and Plymouth, which in pre-war days—before the British government turned railroading upside down—was the longest non-stop run in the world, it may be well to explain one thing which is always somewhat of a mystery to Americans when visiting the old land; that is why the ten-wheeler type of locomotive hauls all the important trains, instead of the Pacific, or 4-6-2 type, which is so popular on this side of the ocean.

The reason is that the greater density of population demands a greater frequency in service, together with moderate main line loads. Trains which in England follow one another in rapid succession over the same iron, with very few or no intermediate stops, would be combined on American roads into one train serving several destinations.

Added to this there is the greatly enhanced weight of American rolling-stock, including a large proportion of Pullman cars on the "crack" trains, which weigh far more per passenger than British rolling-stock. The five-hundred-ton trains in England would cause no surprise to American railroad men who are accustomed to hauling eight hundred and nine hundred ton passenger-trains. With such heavy trains and frequent stops, the heavy Pacific locomotives become an economically sound proposition, and a large steam raising capacity and cylinder proportion are necessary in order to secure rapid acceleration from rest and intermediate speeds.

The engine named the "Great Bear," built by the Great Western, is the only example of the Pacific type in Great Britain. This locomotive, after being tried out on the fast non-stop runs, was found to be too heavy for some of the bridges, and was relegated to the task of hauling coal-drags.

It is equipped with four cylinders, two inside the frames and two outside. The inside valves are actuated by rocker arms attached to the outside crossheads

It is equipped with the Swindon superheater, designed by Mr. Churchward, the

locomotive superintendent, and carries a steam pressure of 225 pounds.

The aim of the various motive-power departments in England is to produce engines that will furnish a return in their performances on their cost of both construction and maintenance. Thus the locomotives of the English railroads are so designed in construction as best to meet the requirements of the road over which they run.

This explains why nearly all of the leading British roads have adopted the 4-6-0 design for hauling their long-distance fliers.

226 Miles in 247 Minutes.

Let's imagine we're about to board a prewar flier. The locomotive which is to haul the 10.30 A.M. West of England Express down from London to Plymouth this trip is one of the popular 4-6-0 design. She is a racy-looking superheater carrying a steam-pressure of two hundred and twenty-five pounds to the square inch.

She is fitted with Walschaert valve-gear, but of a different pattern from that adopted in the States. There is no bell or headlight, and the two blizzard-lamps, one on each side of the buffer-beam, denote that the train is a non-stop with rights over every train on the system.

The steam-dome is conspicuous by its absence, the regulator being placed in the smokebox while the dry steam is collected by a perforated steam-pipe which runs the full length of the boiler.

The engine and train are equipped with the vacuum brake, and like Great Western trains carry twenty-four inches of vacuum. The four positions of the driver's brake-valve are: "off position," which would be "full release" on the air-brake; "lap"; "service," and "on position," which is the emergency position. Over the splasher of the main drivers is the name plate, "St. George"; her number is placed on the side of the cab in raised letters—2923—and as she backs down under the titanic train-shed of Paddington station and couples on to her string of ten cars her long, graceful lines become the object of admiration from the crowd of passengers who will soon be speeding along behind her down toward the beautiful scenery of the "Cornish Riviera."

While we are getting vacuum — that means blowing off the brakes—the driver gets busy with his oil-feeder; it will be the last chance he will have to oil up on the ground.

Once the limited pulls out it must be stopped again only under exceptional circumstances and the driver must do his oiling while the train is skimming along at a mile-a-minute gait; a sheltered place such as a "cutting" is usually selected for this purpose.

Promptly at half past ten o'clock, the "tail-end guard" (conductor) blows his whistle, waves his green flag—in England Americans miss the familiar "All aboard!" of the conductor; instead one hears the shouts of the porters, "Stand back there!" as the train begins to roll out of the train-shed—and the engine buckles down to her task of snatching her load down to Plymouth in 247 minutes.

Bill Rowe is the driver in charge on this trip. He is one of the picked men who run the limited—on the English roads the crews work in "links," and the link of men who run the Cornish flier represent the cream of the Great Western system.

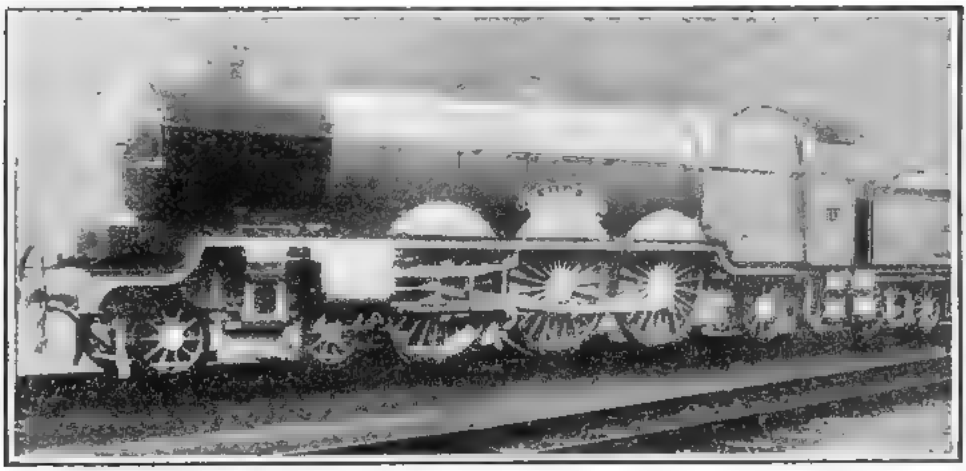
Roundhouse="Running-Shed."

Three miles out of London is the Great Western's roundhouse. In England the roundhouse is known as the "running-shed," and the Great Western's at Old Oak is the largest in Great Britain. Passing Old Oak, speed is reduced to fifteen miles per hour in accordance with the service slack — all slow orders are known as "slack"—but despite the slack Bill Rowe was dusting 'em along at a mile-a-minute clip at Mile-Post 6, and Bill hadn't started to wheel 'em yet.

Sixty-five miles an hour is touched and passed. The vibration of the foot-plate becomes something fierce as Rowe gradually speeds her up until we are splitting the atmosphere at seventy miles an hour.

The next twenty-three miles are reeled off in nineteen minutes flat. We are keeping our heads inside the cab now and having an eye through the storm-window.

The service slack through Reading yards is carefully observed—Rowe is not taking



BUILT BY THE GREAT WESTERN RAILWAY, THE FAMOUS GREAT BEAR WAS LATER FOUND TO BE TOO HEAVY FOR SOME OF THE BRIDGES AND SO SHE HAD TO BE SENTENCED TO HAULING COAL DRAGS.

any chances with his job—but once through the yard we start after that schedule again, and maintain a steady sixty-two mile-an-hour gait up the Kennet valley.

Rolling down the falling incline to Westbury, Rowe opens her up until the St. George is chopping 'em off at seventy-two miles an hour.

Through Westbury and Frome we have to observe a service slack at each place.

Going up the Witham Hill, Rowe handles his engine in such a skilful manner that speed does not fall beyond fifty-one miles; and at this speed we top the summit. Dropping down the other side to Castle Cary, the hogger eases her off, contenting himself with a steady sixty-nine mile gait down the hill.

Evidently he did not wish to spoil his reputation in the dining-car for steady down-hill running.

He maintained this speed right up to Cogload Junction. Approaching Taunton, the block signals put an end to our gallop and cause the limited to use up eleven minutes and twenty-five seconds for the next nine and a half miles, but we rolled through Taunton at fifty-four miles; and at Mile-Post 166 we had attained the mile-a-minute gait again.

Speed began to fall once more over the approaching Devonshire, dropping to forty-one miles up the grade of 1 in 81. However Rowe picked 'em up again as we topped the hill and we shot through Collumpton at seventy-five miles.

This was the highest speed attained on this run, and the engine was being worked well within the limit, as the Limited is one minute ahead of time passing Exeter, the latter city being passed at 1.29 P.M., making a total of one hundred and seventy-nine minutes for the one hundred and seventy-three and a half miles between London and Exeter.

Between Exeter and Newton Abbot there are three service slacks in succession, which bring the speed down somewhat. Starcross, Dawlish and Teignmouth are all passed at reduced speed; then follows the hardest piece of road of the entire two hundred and twenty-six-mile stretch—Hemerdon Hill, which is two and three-quarter miles in length starting at 1 in 97 and rising to 1 in 43 at the summit at Dainton.

The St. George toils gamely up the hill with Rowe nursing her along; but the speed drops down to twenty-eight miles per hour.

Then follows another short grade of the two per-cent variety; but the engine under skilful handling keeps barking as she battles her way up to Totnes. The fire is getting dirty now and it keeps the fireboy guessing to hold her at the two hundred and twenty-five mark.

There are no seat-boxes on these engines; it is a stand-up job all the way, and there is certainly enough work to keep us in that

position. There are no shakers to heave on, as these engines burn a good grade of hard coal taken out of the famous South Wales mines.

The fire is not touched from the start of the trip to the finish, and the way the engines steam would be a revelation to American fireman, who frequently have to fight 'em with the hook in order to get over the road; but nevertheless the fireboy on the Plymouth run is a very busy person indeed.

In addition to keeping her hot, he has to observe and convey the meaning of all signals on his side; and as every mile of the way is protected by block signals, with the train racing through busy junctions continually, the crew have to be Johnny-on-the-spot.

The hogger has to be careful of his coal-sheet and cannot bat her up the hills, as the Powers That Be allow him only thirty-five pounds of coal to the mile. Therefore the driver is continually adjusting his cut-off—which is effected by means of a wheel instead of the reverse lever in use on American roads to meet the changing conditions of the road.

But to revert. Newton Abbot was passed at 2.01 P.M. Then followed the final spurt of the journey, and thirty-four minutes later the Limited rolled into Plymouth North Road Station two minutes ahead of time, having covered the two hundred and twenty-six miles from London to Plymouth in two hundred and forty-five minutes.

This excellent run was the result of magnificent up-hill work, and obtained in spite of moderate down-hill running. The locomotive ran like a well-oiled sewing-machine throughout the trip, and it speaks volumes for the officials of the Great Western motive-power department that these engines can make the time on this run every single day of the year without any engine failures.

This is one of the most nerve-racking runs in the world. The engineers are subject to periodical medical examinations.

The Grand Trunk system, Ontario Lines, had a run of this length during the winter of 1916 from Toronto to Windsor, two hundred and twenty-seven miles, without change of engine or crew; but the train made several stops *en route*. As the engines, which were of the Pacific type, were continually falling down on the job owing to leakage of flues, this run was soon discontinued. This train was the Grand Trunk International Limited, Montreal to Chicago.

HOW WE ARE DOING "OUR BIT."

BY O. W. LONG,

Conductor, Shasta Division, Southern Pacific Company.

ON my passenger run through the agricultural lands of Sacramento Valley and the great lumber producing lands of northern California and southern Oregon, I come in contact with many shippers. They are generally at leisure on the trains, and just a few words to them relative to heavier loading of all their products and the quick release of cars, usually brings about results that give double service from equipment on hand thus generally alleviating the present shortage of cars.

BY G. H. WEEKS,

Car Inspector, Chicago, Rock Island, and Pacific Railroad.

I AM not allowing a bad order-car to stay in yards overnight when it can possibly be repaired. I am also reclaiming all paper from cars that are made empty and giving particular attention to cars loaded at freight-house and to see that no nails are projecting from inside of cars to cause damage to merchandise shipments, thus causing claims. I do not allow any surplus material to be on hand, and I am using all second-hand material when possible.

THE RAILROAD'S QUESTION-BOX.

One Terminal Has Seven Men Who Do Nothing but Solve the Difficulties of the Bewildered—Can Travelers Think?

BY RICHARD WHITMAN.

THE business of informing the traveling public how and when to reach its manifold destinations, and to inform it swiftly, correctly and politely, is one concerning which the big railroad powers have devoted much time, thought and work during recent years. The result is a system that—

Well, let's permit the system to talk for itself, which little thing it does, all day long. Let us visit the Grand Central Terminal in New York City, where two branches of the information bureau inform the restless public through the day and night regarding the million and one details of passenger service and rates.

There is the information stand upon the floor of the concourse, and there is the telephone switchboard up-stairs; but let us first visit the stand upon the big main floor.

Uniformed Chesterfields Answer Questions.

There you will find some young men, in neat uniforms, with pleasant smiles, remarkable clarity of enunciation and the manners of Chesterfields. All these three elements of equipment are required by the railroad company.

And if you are sufficiently interested to stand and listen to the give-and-take across that counter—and you could hardly find a more fascinating way in which to spend a few moments—you will decide that the general public could not do better than to take these young men as mentors in matters of deportment, self-mastery, and clear thinking.

They are there efficiently to aid the public, and this they do. Moreover, in lingering around this stand you will find that it is a clearing-house for human nature.

The range of service extended is wide. It has to be, for in the course of twenty-four hours all the world surges about this stand in quest of information, and requests for the information are made in many tongues.

Speaks Seven Languages.

The Central has amply provided for the lingual needs of its polyglot patrons. It employs both floor interpreters and bureau-of-information men, so far as possible, that can speak tongues other than their native speech.

For instance, the big system now has on duty in the New York Terminal a Pole who was formerly a floor interpreter. He has been behind the information stand for some years now and is one of the best men serving in that capacity.

He speaks Russian, German, Polish, Italian, Serbian, Bulgarian, and English, the latter without the trace of an accent except where he hits "w's" and "y's." Let's follow this man through an eight-hour shift that is full of business for him, and incidentally of aid to many alien bewildered and in some cases adrift in a strange land.

Up steps a Russian, oddly dressed, with his queer old satchel and a bundle or two. He has been mumbling through his whiskers many syllables that nobody could understand till an attendant led him to this friendly Pole in the nifty uniform.

With the very first words the Russian's eyes lighten and he produces a dirty card that is nearly undecipherable. But the Pole makes it out finally and sends him away, in charge of an attendant, to a train

that will start him toward his future home in the State of Washington.

"*Do wydzenie,*" calls back the Russian, this signifying, "Good-by."

A wild-eyed Pole comes to the stand saying that he has had his pocket picked on the street, and will they take him on the train to Chicago and let him pay after he has looked up friends there who will surely let him have the money? The interpreter explains that this cannot be done, summons an attendant and sends him to an emigrant home or to a travelers' aid till he can communicate with his friends in Chicago and secure money.

"*Bog z wami*" ("God be with you,") calls out the grateful traveler as he turns from the stand.

Answers in Any Tongue.

Next you may hear the liquid speech of an Italian as he steps to the stand. Note that he tips his hat as he makes inquiry, that he tips it again with a "thank you," as he turns away after receiving the information he sought.

His manners have been equal to the information man's own. Then contrast this behavior with that of many a college-bred American, and you will be ashamed of at least some of the citizens of your country.

"*A ke ora si parte treno per Poughkeepsie?*" inquires the Italian, inquiring what time the next train leaves for that Hudson point.

"*Treno parte a la otto,*" responds the information man, informing him that the time is at eight o'clock.

And so goes his day, a busy one. It cannot be said that his job can possibly be monotonous.

The drama, the comedy, often the tragedy of the great human scheme roll and billow and sparkle and gloom about him; he is in touch with the very *motif* of life that is unrest, and he is a part of it, and a helpful part, too. He tells it what trains to take.

The man in the natty uniform, who stands behind that counter, has an eight-hour shift of real work. There are some lines of human endeavor where you can merely put in your time — till the boss catches you at it—but not in this business of telling the traveling public what trains to take.

You are not only in the lime-light but you have to answer questions correctly. And to do that little thing you must have served an exacting apprenticeship.

It takes three years to make a real, honest-to-goodness, efficient bureau-of-information man. The chief of the bureau is careful to pick his man, and frequently he has soon to pick a new one, so exacting are the requirements of the job.

A naturally retentive memory, quickness of thought, the ability to keep one's temper under the most exasperating circumstances; these are the three big essentials for the place. Many feel themselves called to fill it, but few are ultimately chosen.

When a thoroughly competent man is found the chief of the bureau will keep him there as long as he wants to stay. The efficient information man practically has a life job.

During those three years while he studies hard to get into shape to meet and answer the questions of all comers, his pay is gradually raised as he earns it. Before he is eligible to draw the highest wages paid for this work he has done considerable study of timetables in his spare time.

He has bent all his energy to making his brain an automatic recorder of figures and names that to the average traveler, considering the same subject, would be a hopeless jumble.

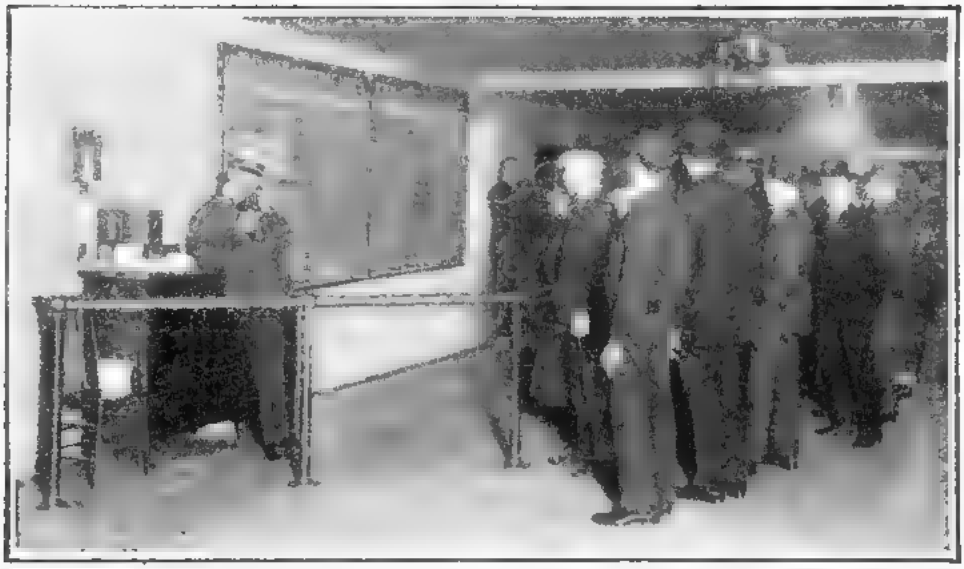
Usually Start as Gatemen.

Some information men come from other branches of the service. Brakemen and firemen have been known to enter it and be successful

But most of them are recruited from the ranks of gatemen, or perhaps floor interpreters, like the man introduced to you at the beginning of this article, who speaks seven languages.

In the Central Terminal there are usually four men working during the day and three at night. From 1 A.M. till 5 A.M., when there are few passengers about the concourse, there are no men stationed at the stand.

Think of memorizing the time of arrival



THE RAILROAD DOESN'T WANT ANY ONE TO MISS HIS TRAIN SO AT MOST OF THE LARGE TERMINALS YOU CAN NOW FIND, IN ADDITION TO OTHER DISPENSERS OF INFORMATION, A BULLETIN BOARD WHICH TELLS YOU JUST WHEN TRAINS GO AND COME, AND IF LATE, WHY

and departure of nearly a thousand trains a day from that gigantic terminal; of the arrival of each of these trains at a thousand and one points extending out into the Middle West; of memorizing also, as the reports come in, the inevitable discrepancies, due to storms or other accidents, in the arrival of many of these trains, and you will have a slight idea of the difficulties of the information man's job.

Men Give Least Trouble.

The bureau man reports that, as between men and women, men give by far the least trouble. Not to criticise the gentler sex, but merely to state a fact, the men as a rule are quicker to grasp the information, also, they are more facile in asking for it. Women are inclined to be nervous, though the evidence is that the fair sex is growing more resourceful and self-reliant of later years.

Many travelers have been heard to marvel at the unfailing courtesy of these men, also at the purity of their diction. It appears that these items of deportment and speech are requisites of the job. Candidates must study both to rule their spirits and to express their information with clarity and correctness.

Nobody who is mentally lazy has any chance to get a job behind the information counter. If the candidate is inclined that way, and has not discovered it, the job soon shows him up. Then the chief shoots him off sadly but firmly, to make his living in some other way.

There's a Switchboard Busy, Too.

This stand down-stairs is only one branch of the business of telling the public how, when—and almost why—to go. Up in a room on the first floor of the Terminal above the concourse there is a switchboard, maintained for the same purpose, and it is kept busy all the time.

The only quiet hours correspond with those of the stand down-stairs, when the world is as nearly universally asleep as ever it becomes.

To hear some of the questions asked those patient operators — and they are patient—tends to rouse in the mind of the hearer the pessimistic suspicion that a great many people never really think. Nor is it possible, apparently, for some people who are asking questions over a phone to remember the answers for two consecutive seconds. Here is a case in point that is not uncommon

A man will call up and inquire at what time the next train leaves for Albany.

"At eight o'clock," he is informed.

Then he will inquire the train before that, and is told that it is at five o'clock; then the one before that, and is told that it leaves at three o'clock. Next, this traveler will come right back and inquire what is the next train after three o'clock.

"At five," the time remains, of course; and next:

"Well, what's the train after five?"

So he has worked back to eight o'clock, and is more than likely to hang up in a mental flurry, not at all sure of his ground. Throughout the whole tedious colloquy the operator has remained imperturbable; it's his business to be

The chief of the information bureau, who also has in his charge the uniformed men behind the counter on the floor of the concourse below, is in charge of this branch of the service. In the summer, when the traffic, of course, is far larger, there are four men on duty on the board beside the chief, and in the winter there are either two or three, in addition to the chief.

"In the summer the board is kept lit up all the time," said an operator, "and believe me, we have eight hours of steady plugging, all right."

At the question of whether he had ever hazarded a guess at how many queries he answered in a year, he threw up his hands in justified despair.

The duties of this department cover a wider range of effort than that required of the men at the concourse stand, for at the switchboard they quote rates for tickets to all parts of the country, this involving many combinations with other systems. And this is a nice little job, too, for a Philadelphia lawyer to tackle.

Nearly 50,000 Phone Quizzes a Month.

How many questions are asked and answered at this switchboard? Fortunately, the information is at hand, for a record is kept, and it is one that will make you, gentle reader, open your eyes.

The biggest winter month, at the time the data for this article was secured, remained at 47,613 calls, which same were shot into the information switchboard during a De-

ONLY SEVEN THOUSAND PERSONS A DAY GATHER ABOUT THE INFORMATION BOOTH JUST NOW IN THE GRAND CENTRAL CONCOURSE IN NEW YORK CITY TO CHAT WITH THE CLERKS; BUT THEN THESE ARE THE DULL-SEASON FIGURES. IN SUMMER THERE ARE MANY MORE.

cember. The best summer figure was in a July, when 49,744 calls were registered.

The biggest single day's record is 3,333 calls, for the twenty-four hours, this mark having been set on the day in the autumn of 1915 when there was a serious tie-up on the New Haven system.

From June to September, during the hours of from nine o'clock in the morning to six o'clock in the evening, there is an average of two hundred calls an hour. The daily average the year around is stated to be two thousand calls.

As you sit in this room, listening to the continual buzzing and the voices of the men swiftly answering those who call for train information, there is also audible, like a roll of sustained, far-away thunder, the concussion of myriad footfalls on the floor of the great concourse below. And there is borne in upon you a deep sense of the tremendous volume of passenger traffic.

He Wanted a Time-Table, He Did.

The chief of the switchboard crew is also the head of the floor-information force, and he is gifted with a shrewd humor that is kept continually fed in this business of spreading the glad tidings regarding the public's destination. He vouches for the following incident, which throws a curious sidelight upon at least one phase of character.

It occurred recently when, owing to the illness of a pair of the regulars, the chief was standing behind the counter. A man stepped up to the counter.

"Give me a time-table," he directed.

"Which time-table?" was the natural query.

"Why, any time-table," he answered.

"Yes," pursued the chief; "but where do you want to go?"

The traveler looked at him indignantly.

"That's none of your business," he retorted. "Give me a time-table; it's the third time I've asked you for it, ain't it?"

Perhaps the West Shore Limited is due in three hours. There is a storm raging. A light pops into being on the switchboard. A voice asks the operator:

"How late will the West Shore Limited be?"

"It is reported fifteen or twenty minutes behind at present, madam."

"Well," she inquires, "how late will it be a half-hour from now?"

She is courteously informed that it is impossible to answer this, but comes back casually with:

"How much time will it make up before reaching New York?"

A layman would be screeching mad by this time; but the angora of the operator remains passive. His is the most weather-beaten goat in the business.

"That I can't tell you, madam," he replies urbanely.

"You can't?" she comes back in a tone of amazement, "why, I thought that was what you were paid for!"

"Possibly," returns the operator, "but you see it is absolutely impossible to tell."

And he restrains the very human impulse to inform her that only a very stupid person would imagine for a moment that the information board could give information that the engineer of that train, struggling on through the blinding storm, can't give himself.

"Well," she disgustedly insists, "who can tell me about it?"

And the long-suffering operator has to restrain also the justified desire to hint to her that she might try a wireless to the heavens, and has often patiently to repeat what he has told her previously about the situation. And it's a ten to one shot that she isn't satisfied at all as she hangs up.

"How much money does it take to get into Canada?" is one star question that is remembered by the switchboard men.

And this is but a single one of many queries that the department receives from the uninformed.

Here's the Prize Freak Interrogation.

The prize of the "freak" collection is undoubtedly this story of a question that was shot in shortly before midnight. The light flashed and the operator responded.

"Is this the information bureau?"

There was a pause during which the operator could plainly hear pealing over the phone the sounds of wassail and of cheer. The call was evidently from a saloon.

"Yes, sir. What's wanted?"

"I want to know," finally pursued the questioner, a little thickly, "what was the night of the big wind in Ireland?"

"The what?" gasped the operator.

"The night of the big wind in Ireland," repeated the bibulous one at the other end of the wire.

"Are you sure you have the right number?" demanded the operator, a little wrathy as it sounded as if the questioner were trying to make game of him.

But he found that the question was asked in good faith. A group had been disputing over it and this particular man had told them he could settle it and had called the bureau, thinking it was conducted to inform the public regarding any topic under the sun!

He was advised to call up one of the newspapers, and was saying sarcastic things about an information bureau that didn't inform when the operator turned from the sound of his voice to other troubles.

Another question that was asked within recent months was:

"How far up the Hudson does salt water run?"

The boys were really interested in that question, and would have answered it if they could, but nobody knew. And the questioner was fairly astounded to find that they didn't.

ANSWERING THREE THOUSAND QUESTIONS A DAY (AND A GREAT MANY OF THEM FOOLISH) IS THE PLEASANT JOB WHICH THE TELEPHONE OPERATORS OF THE NEW YORK CENTRAL'S "QUESTION-BOX" HAVE TO TACKLE. MEN ARE ON THE JOB AT ALL HOURS OF THE DAY AND NIGHT TO KEEP THE PUBLIC INFORMED

"Why did you think we could tell you?" curiously asked the operator.

"Why not?" was the instant rejoinder. "Doesn't the Central run up along the Hudson? You ought to know those things!"

Worst of it is, they haven't looked it up yet! Of course, they could have advised him to walk up the river, tasting it till he found it fresh, but that would have been a "fresh" retort.

Back in 1895 the Central employed two men in its telephone room to answer calls about train-service, one of them serving in the day and the other at night. The calls in those times averaged about fifty per day.

In 1900 two more phones were installed and the average of daily calls had then jumped to two hundred. This was in the temporary station at Lexington Avenue. To-day there are fifteen men employed in three shifts daily.

"The quotation of rates to various points is a tough proposition," says the chief. "We established this service about five years ago, and it necessitates continual study for us. There are constant changes, of course, and new questions coming in all the time from new angles. Who will dare allege that the information man's life is a happy one?"

Big Growth of Phone Service.

His remark emphasizes the growth of the service since December 13, 1906, when the Lexington Avenue terminal was opened. In the rear of the office was installed a little monitor board. The average calls per day of twenty-four hours at that board were eight hundred.

On February 21, 1913, the present switchboard was installed in the room it now occupies in the big Terminal. There are sixteen direct wires leading into the office, besides six wires to connect questioners with the Pullman offices, which extend information further.

The stand in the center of the concourse is connected by phone with the switchboard, where the chief presides, but the floor men trouble the chief very little with queries during the progress of the day. They are taught to know their business and to stand upon their own feet, so it is only in case of emergency that they call up-stairs.

Of course, the men at the concourse stand receive many inquiries for rates. These they do not have to answer, merely directing passengers to the ticket windows.

Once in a while an inquiry is made at the stand for a very obscure route, in which case the assistance of the operator at the switchboard is invoked if the necessary authority on the routing question is not found below stairs.

The work of the operators at the switchboard has been greatly helped since January 22, 1916, when a couple of phones were installed equipped with the new attachments that enable you to get your own number, so you needn't care whether Central was busy or not; and if she was not, you can catch her at it. This invention proves that West is not so slow, since it came from golden California on the coast.

There is a little cylinder, with the figures one to nought circling it, and a disk which you whirl in turn to these figures, ringing the combination you want and speedily receiving the "hello" you seek; so if service is interrupted or slow at one of the regular phones you can turn to this new one, getting your party in a jiffy.

"They'll be inventing something automatic to answer questions next," declares the chief, "in which case we'll all be out of a job."

Speaking of the former floor interpreter who now stands behind the concourse counter and burbles seven languages, there used to be a floor interpreter some years ago who spouted the record number of thirty-two languages! He was only in the twenties, at that. He graduated from the floor and the information stand and now has a good berth in the Central's law department.

4,000 to 7,000 Ask at Concourse Stand.

It has been computed that at the concourse stand an average of 4,000 persons each ordinary day question the men in natty uniforms behind the counter. During the summer rush in traffic this number is considerably heightened.

From June 1 to September 1 it is computed that 7,000 persons per day are answered.

So you can get an idea of the flood of business at the Grand Central Terminal, particularly when you consider that any number of the patrons do not ask questions. They merely step to the ticket window and secure tickets or mileage and hike for their trains.

And then figure the swarms of commuters who never take a moment for any questions; just hot foot for their trains. As in the words of the old-time hypnotist, speaking to a subject who is supposed to attempt to move:

"Try and you can't!"

The chief of the bureau tried a little

numbering stunt one day. He got one of those attachments which he calls a "sort o' cyclometer arrangement," to figure the number of persons who asked him questions during the day at the concourse stand. For each person who questioned him he punched the apparatus.

He started at ten o'clock in the morning and at half past four in the afternoon he quit cold because his thumb was lame and sore. At that time he had 984 questions recorded.

For the rest of the time he computed that there were enough to make the total over 1,000. As the other two men on the stand answered fully as many as did he, a total of over 3,000 persons were answered for the day.

A vast number of time-tables are lifted from that concourse stand in the course of a week by the hungry public. The man in charge of these supplies says that the average for a week in Central time-tables given out is 30,000 and in the New Haven 25,000.

Also, time-tables are carried of all the large American systems and in fact of all the leading lines. For instance, about 3,000 time-tables of the Pennsylvania system are required every week, and a total of 15,000 of all other lines weekly. The public grabs for 'em so eagerly that they melt like snowflakes in April.

DULUTH'S TITANIC IRON-ORE DOCK.

ON THE GREAT LAKES, AT DULUTH, THE DULUTH, MISSABE AND NORTHERN RAILWAY HAS ERECTED AN IRON-ORE DOCK THAT OUTSTRIPS ANY OTHER ALONG THOSE SHORES IN LENGTH, LIGHTNESS, AND STORAGE CAPACITY

TRAFFIC along the Great Lakes is making tremendous strides and the serving railroads are keeping step in the march of bigger business by continually improving and increasing their facilities.

At Duluth the Duluth, Missabe and Northern Railway has constructed a mammoth ore-dock with 384 pockets, capable of handling 300 gross tons each. And the total working storage-capacity is more than 115,000 gross tons, equivalent to 14 average cargoes of 8,000 tons each. This is some 3,000 tons in excess of that of the Great Northern's dock, which hitherto has been the largest on the lakes.

Exclusive of approaches and end towers, the dock is 2,304 feet in length, 73 feet wide, and 80 feet in height above water. The superstructure is steel, and rests on a concrete base, and besides being the longest and largest dock on the lakes, the new structure is also the lightest.

The spouts are 36 feet in length, being the longest in use on the lakes.

The Sunny Side of the Track

ACCORDING to a story credited to the late Ian Maclaren, a train had stopped one day at a junction point in Scotland, when a porter put his head into a carriage window and called out:

"Any one in this carriage for Doun? Change for Doun! Any one for Doun?"

No one moved; and in a few minutes the train was speeding along, not to stop again for nearly an hour. Then an elderly Scotch woman turned to a lady sitting near her and remarked in a satisfied tone:

"I'm bound for Doun, but I'd no tell that mon so"—*Exchange.*

LAWYER (to Pat, who had fallen from a street-car): "I presume you wish to sue for damages."

Pat: "Not on yer loif! I'm damaged enough now."

—BIDE DUDLEY, in *New York Evening World.*

OBSERVING a passenger with the unlighted butt of a cigar in his fingers, the street-car conductor requested him to put it out.

"It is out, you chump," responded the passenger.

"Pardon me," resumed the conductor, "if I have failed to make myself clear. The conditions to which I had reference was not one of mere temporary non-combustion, but of elimination; the eradication, I might say, of the physical presence of your nicotine-laden remnant, this process followed necessarily by cessation of the odor now permeating an atmosphere already somewhat deficient, I fear, in the essential element of ozone. I'm a humble conductor, and my aim is to please, but you, big porcine stiff, you throw that cigar through the door, or I'll throw you and it both out. See?"

"Excuse me, professor," replied the passenger meekly, and the incident was closed.

—*Express Gazette.*

LANGUAGE is the vehicle of thought, but in a majority of cases the vehicle carries little tonnage.—*Bradford Era*

"IF you had any ambition, you wouldn't be tramping about the country begging your food," said the hard-faced housewife.

"You do me an injustice, mum," replied the tattered caller. "It was ambition dat proved me ruin."

"Indeed?"

"Yes, mum. I made up my mind dat I wouldn't accept a job dat paid me less'n twenty thousand dollars a year."

—*Birmingham Age-Herald.*

"THAT dog of yours seems fond of chasing trains."

"Well, he isn't much of a fighter. Trains are about the only things he gets a chance to chase."

—*Philadelphia Bulletin.*

A TEXAS legislator recently offered for enactment a bill designed to prevent head-on collisions between railroad trains in his State. The main part of the text said:

"When two trains, coming from opposite directions, approach a crossing, both shall stop, and neither shall cross until the other has passed."

—*Selected.*

IN a Kansas town where two brothers are engaged in the retail coal business a revival was recently held, and the elder of the brothers was converted. For weeks he tried to persuade his brother to join the church. One day he asked:

"Why can't you join the church like I did?"

"It's a fine thing for you to belong to the church," replied the younger brother. "If I join the church, who'll weigh the coal?"

—*London Opinion.*

LETTER written home by an Irish girl, fresh from the sod, after being engaged in domestic service:

"It's a strange place I've come to, surely; cabs without horses, and the lady of the house playin' the pianner with her feet, and talkin' to herself perpetual down a candlestick in the hall!"

—*Mountain States Monitor.*

MR. JOHNSON: "Sambo, you're looking kind of downcast to-night. What's on your mind?"

Sambo: "Oh, Mr. Johnson, I's feelin' terribly blue. Tried fo' a job on de street-car, but couldn't land it nohow. And me wid fo' years ob experience as a police officer. Dat am enough to make a human bein' crazy."

Mr Johnson: "Why, Sambo, I'm surprised at you. What has your experience as a police officer to do with a position on the street-car? Why, your logic is ridiculous and absurd."

Sambo (excited): "Look h'yer, Mr. Johnson, you make me feel so unnecessary. Why, an ex-policeman is just the man fo' a job on de street-car. The idea! Doesn't 'Fesser Steinmetz say dat ebery copper am a good conductor?"

—*Current News.*

"SUNSHINE" RILEY IS HEADED IN.

BY CHARLES WESLEY SANDERS.

Pertaining to the Love Experiences of the Blithesome Engineer and the Solemncholy Con.

IN the fall of 1893 I was on my uppers for the first time in my life. I had been railroading for an even dozen years, and the table of my troubles and joys was thus, as per follows, to wit and *i.e.:*

Had had twenty-four jobs.

Quit ten times.

Fired fourteen times.

Once I had had a hundred and seven dollars in the bank and a check book in my kick. Too much prosperity. I quit the head end and spent the hundred and seven and borrowed five from a true friend. Spent that.

Now, I hadn't seven cents. I wished I had. I'd have got three cents more somehow, some place, and invested it all in beans. I was hungry.

However, I had ten nice clearances, and I could keep a secret about the times I'd been fired. It was morning as I tabbed up my troubles. The last cent I'd had I'd spent for a bed. No cash for breakfast. I was hungry, but I needed to go some place as much as I needed food.

I was nix on the one railroad that passed through this town, so I couldn't get a job. I hit nine conductors for a ride in the wagon. They turned me down. Seven of them wouldn't speak to me at all. The tenth man gave me a lift. I was hungrier.

I landed right side up in a big Ohio city —big for the size of it. Nine railroads run into it. Eight railroads couldn't see me. The last I got a job on. Nothing like sticking to a thing. I was to report the next morning to ride the first car behind the tender.

I took my empty stomach up-town, after persuading the boss to give me a letter saying I had a job. I was looking for some common, ordinary place to hang up my hat and gorge myself. I swore I would never quit this job.

I had no carfare, so I had to walk—me and my hunger. I came to a fine street with nice houses on it and big trees along the walk. On the corner of this street was a sizable house. I gave it a look, having nothing to do with my eyes. Then I stopped dead in my tracks, for in the parlor window hung a sign, "Boarding."

"Aha!" I says. "Some once wealthy family fallen on evil days. It seems too good to be true."

I went up and rang the bell. A girl came to the door. I gulped. Couldn't help it. Rosy and plump and smiling, blond and brown-eyed, white teeth and a pleasant "Howdy do?"

I got all that in two seconds, and then she says to me—me being all speechless:

"Was there something you wanted?"

"It isn't Hallowe'en," I says. "Did some guy with a hangover from last year put that sign in the window?"

"Oh, no," she says. "I wish to take a boarder."

"Just one?" I says.

"Just one," she answers.

"Meaning me?" I says; and before she could say anything to the contrary I shoved my letter into her lily mitt. She read it, and then she opens wide the mansion door and bids me thus:

"Walk right in."

"I did. She led me along a hall to a room that had a thousand dollars' worth of furniture in it, at least.

"We have never had a boarder before," she says. "I don't know what I ought to ask you to pay. Do you?"

"I'll give you an order on the pay-car for all I'll draw down in the next year, barring a few clothes and some chewing," I says.

She uncorked a laugh. Silver b-e-l-l-s!

"Would six dollars a week be too much?" she says.

"It's all the same to me," I says. "I'm hungry."

"I'm just getting supper for father," she says. "I'll get some for you. Your room is at the head of the stairs. You can go there now, if you like."

I got myself up the stairs somehow. The room was grand. I couldn't have done better in a four-dollar-a-day hotel. I washed my face and combed my hair and went down-stairs.

"What do you do on the railroad?" she asks me, coming to the door of the room where I was sitting on the edge of a chair.

"I'm going to brake ahead on this one," I said.

"Do you know Sunshine Riley and Sunset Jenkins?" she says.

"I don't think so," I replies. "Mebbe I've met 'em in the middle of the night and didn't recognize them."

"They work on your road," she says. "Sunshine is an engineer and Sunset is a conductor. They are both friends of mine. They call on me. Times are pretty bad, and father thought we had better add a little to our income till times improve, if they ever do."

She went back to the kitchen. I could see she was a hasty little information bureau. The dope was easy. Dad was mean and moneyed. A couple of rails, borrowing the glories of the dewy morn and the crimson eve, were paying court to the lady. I didn't blame them, but the idea of the old guy making a kid like her work wearied me.

I sat across from him at supper. It was a nice supper—for a canary bird. The old man got more solemn every time I speared a slice of bread. I speared about eight slices. I had to eat something. He wouldn't talk to me except to remark every minute that times were bad. I knew that already. While I was finishing the crumbs the old boy went out of there and left me. He thought he was safe because there was nothin' left on the table to eat. The girl came in.

"Did you have sufficient supper?" she says.

> Politeness is do, to do, and say
> The kindest thing in the kindest way.

So, believing in being kind to myself, I says very politely:

"No, ma'am. I did not. I'm still hungry."

"Mercy!" she says, and scampered back to the kitchen.

In a minute she came in again, and she had a ham sandwich that had the other whole meal backed to the skidway. I ate it and felt improved in health.

"You can sit in the parlor if you wish," she says to me as I sighed.

I went in and began to read the evening paper. Pretty soon she came in and sat down and started to crochet. The door-bell rang.

"There," she says, "is Mr. Jenkins now."

I should have left. I didn't. The girl answered the bell and came back leading Sunset. The girl introduced us, indicating that I was a rail also. Sunset was very nice. He shook my hand and said he was glad to hear it, and he sat down, and all three of us had a sociable chat.

This Sunset was quite a person. He was almost as big as the back of a hack, and he had a most remarkable black mustache and a chin that no amount of scraping would make anything but blue. I told myself that if I ever caught him on a run I would do what he told me to do.

Well, I played fair and gave 'em five minutes alone together about ten o'clock. Next day I went out on my run.

At the end of the week I came in one evening just in time to get to the house for supper. After supper Sunshine came to call. When I looked at him I got it all.

Sunshine was that. He was a tall, upstanding, red-headed gink with a smile splitting his face all the time.

Beside him Sunset was a funeral. Sunshine talked by the yard, and he didn't skimp the measure. While the girl was finishing the supper dishes, for Sunshine was an early comer, I says to him:

"What's this Sunshine and Sunset stuff?" He rattled the red lamp-shade with a laugh.

"It's this way," he says. "I've always been a gay kind of a kid. Free spender, easy-goer. Never have the price of anything four hours after pay-day, but my credit's good. Generally owe half my pay in touches here and there. No time to be serious, but get 'em over the road. Sunset has money in the bank."

Sunshine's eyes got dark for a minute.

"It's a good habit," he says. "I'd do it, too, if I knew how, but I don't. Sunset is a solid man. He's grave and quiet, like the end of the day. Me—I'm like the birds singing in the trees at dawn. Get me?"

"You talk like a piece of poetry," I says, "but I get you. Do you realize that Sunset means to marry the lady of the house?"

"And so do I," says Sunshine.

"That 'd be bigamy," I says.

"If *he* don't," says Sunshine, "it's a fair race, old horse. Sunset and I are the best of friends. We know each of us has got the same ambition. It's let the best man win. Between you and me and the switch-lamp that was blown out, I think Sunset will win. It's all up to Miss Susie."

"She can have her choice of being happy or well provided for," I says. "But can't she be both? Her old man is rich and not riotous. I learn he owns a brewery all by himself. He makes more money off beer-foam in an hour than you make in a month.

"He's starved himself to death. He isn't going to last long. Why couldn't Susie have her Sunshine and the kale, too?"

"Bah!" says Sunshine, as you would have expected. "I don't want any of his money. He's too stingy to live. The idea of his having a boarder in the house just because there aren't so many nickels in sudsy circulation as usual!"

"Oh, he's a close container all night," I says. "But if you think Susie is leaning toward the twilight time you want to consider all things."

"She'll take me just as I am or not at all," says Riley.

He looks at his watch.

"She'd better hurry. We'll miss the first act if she don't."

"How can you take her to a show between two pay-days?" I says.

"I can always make a touch," says Sunshine.

In comes Susie in a modest little dress and a modest little hat and gloves that had been repaired and cleaned some odd times. I noticed that because I'd expected the brewer's daughter to doll up for a blow-out.

II.

It took Susie's father two minutes to die and an hour and a half to bury him when I had been boarding there a week. The doctor said it was heart disease. I guessed he had worried himself into his grave because of the loss of money he had never had. Anyway, he was dead!

I should have gone right away to Miss Susie and suggested that I get me another place to board, but I was an orphan child even then, and I had only myself to look out for. I had a hunch that there would be plenty of food to eat thereabouts from then on, and I was right. The table groaned and so did I many a night.

I've gone over the whole district with barely a bite just to save myself for the meal I'd get when I got in. And Miss Susie didn't say anything about my leaving. I noticed she was kind of absent-minded, and I learned later why that was.

As soon as the old man was out of the way Sunshine and Sunset begun to press their suits. And Susie was out on a limb. She could hardly make up her mind. Coming from the kitchen or going there she would stop in her tracks and go fathoms deep in a thinking spell.

She would look at Sunshine and Sunset with her eyes all puckered up when one of them was there. She would listen very eager to Sunset's words and to Sunshine's paragraphs. Susie was the original stop, look, listen kid about that time.

I looked for something to bust between Sunshine and Sunset. It didn't seem to me that it was in nature for two guys to want

to marry the same girl and still be fast friends like those two.

Through fellows being sick and laying off and getting soused and hurt and one thing and another, I was thrown together with those two on several occasions. This was a single-track pike, and whenever we had to go in Sunshine and Sunset would foregather in the telegraph shanty. Seemed like they just wanted to be near each other.

Of course, in those days we hadn't ever heard of this armed neutrality stuff, though I'd known a Mick or two that'd carry a brick in his pocket just to have it there. And so, of course, I didn't suspect that one of these ginks was being hostile and harmonious all at one and the same time.

Why, they'd sit in the outer room of some shanty for half an hour sometimes, when the despatcher had made one of his best guesses, and Sunset would pretty near laugh out loud at Sunshine's blatter. And when Sunshine had given his opinion on everything that a sane man ever had an opinion on he'd inquire very politely:

"Don't you think so, Sunset, old horse?"

And Sunset would toss it right back:

"That's right, Sunshine. That sure is right."

It was too good to be true. It is most queer, but usually when a man is soft on a girl himself and somebody else gets soft on her, he will say that person has a head like a peanut and a heart like a hunk of coal. And, at the same time, he holds himself as holy as a salted mackerel. This love business is the great international sport.

Well, three pay-days had come and gone since I had domiciled myself at Susie's. I was getting quite at home there. The more I saw of Susie the more I knew that either Sunset or Sunshine was going to merit a whole bucketful of pity before many moons had waxed and waned. The one who didn't get her would have to be a mighty good loser or he would go off his nut.

And those two weren't wasting time. Susie couldn't go any place with Sunshine then, account of being in mourning for her dad; but Sunshine came early and stayed late when he was in off the road. Sunset did likewise. I figured it kind of gave the edge to Sunset, for he had got Sunshine where Sunshine had to play the parlor game, and Sunset had had a good deal of practise in that.

It came along to late November, and business on the road got a little better. We were moving considerable coal into the East, and some hogs and cattle and so forth. We had our first snow on the twenty-ninth. It wasn't such an awful storm, but there was considerable sediment along the right-of-way, and nice cold pellets were flipping in the wind as I went down to pursue my task of riding the front end.

I figured on catching Sunshine and Sunset, or one of them, for I knew they were about first out, and I, being a general utility man, was running with any hick that happened along. I knew those two were about first out because they had been up at Susie's the night before.

They had played a duet for the first time. Sunshine had sat and talked from seven-thirty till ten-fifteen. Susie and Sunset laughed and listened. I'd have said that Sunshine had had the best of it, but when Susie bid them good night there was no difference in her voice as it floated up the stairs to me.

Well, along about eight o'clock the next night Dawn and Eventide and I and the rest of the necessary ginks pulled into the east on First Eighty-Six with forty loads of soft coal and sundry squealing hogs and lowing kine.

Our hero was a first-rate engineer, and our other hero was an up-and-at-'em conductor, so things moved in first-rate style. The despatcher had to give us the best of it or tell the chief why, so we sailed right along, passing west-bounds into clear with precision and delight. If a man could always travel on east-bounds on a single track in bad weather, he would be reasonably happy, even if he had to walk back.

We came to Idlewild about ten-fifteen, and had to go in to clear for a varnished string, and found a red block against us likewise. We voted the despatcher a nice warm cup of tea for giving us our orders at a station where we had to head in, anyway. He was a good scout—that despatcher. Tell you a story about him and Nellie Bliss some other time.

The two sunny gents went in and got their flimsies to the effect that they would wait at Kenton till eleven-twenty for First Ninety-One and at Mattison till eleven-fifty for Second Ninety-One.

The operator says the two are running very nice and will probably be in for us at both places. So all we can figure is high-balls and keep on going. But pity 'twas that we hadn't had to wait a week or such a matter for that second section.

We swept by the first one all right and went pegging for Mattison. I never heard what became of Curtis after that, and I don't know what he had on his mind that made him forget to tarry at Mattison till eleven-fifty.

As near as I could figure it was eleven-forty or such a matter when we hit him on the nose just west of Mattison. He was dragging a string of empties, and he was coming as if he had to get some place in no time. Many men have tried to pass two trains on a single iron, but if it's ever been done, the fact isn't noted in my book. The only way it could be done would be for one of them to ride horseback over the other, and I believe that would be inconvenient.

Well, I am glad that I do not have to record that we pulled a couple of mangled heroes from beneath the wreckage. It makes nice poetry to tell about the engineer sticking to his throttle in the face of disaster; but what's the use? A live jumper is worth a dozen dead stickers.

Sunshine always kept a good lookout; and when he sighted that Ninety-One bearing down on us he let the whistle holler and went out the side. Fireman followed on the other side. I had come over from the hind end, to be ready for the meet at Mattison if the Ninety-Oners shouldn't be in.

As soon as I heard the whistle screech I just climbed over the side of that black diamond gondola and let go with all fours. Outside of a few bruises and a mouthful of snowy grit, I came through pretty fair.

As I was sliding and rolling toward first base I took an upward look to see where those cars were going to head for when the two engines gave their fervent embrace to each other. And then I saw that Sunset had come over from the caboose behind me and was saying a quick farewell to the third car back.

Now, Sunset was all man so far as that goes, but as I've stated heretofore, he was built like the back of a hack. He had to have time to get into motion. Instead of rolling and sliding, the nimble way I did, he just squashed down on the right-of-way and stayed there.

Then the two engines eased into each other. I thought the first car behind the tender was going to turn a complete somersault, but she stalled when she got well balanced on her head. The next car and the one Sunset had been riding tried to be neighborly and give her a shove over, but she balked.

Then the car Sunset had jumped from got sore and tried to stand on her shoulder. The net result of that, so to speak, was that several and various tons of coal spilled in Sunset's general direction. It was the darkest sunset ever I saw.

Well, after considerable bumping and spilling and piling up, and the air being full of different kinds of sounds, the wreck was over. An inventory showed Sunset to be the only one missing. Curtis was lying back along the track with a cut on his head, but outside of that the casualties were nothing much.

Sunshine comes a running back to where I was going over myself to see if I had busted anything, and he yells.

"Who was that jumped from the third car? I saw his lantern go down and him follow it. Was it Sunset?"

"It was," I says

"Where is he now?" Sunshine yells. "Man! Where is he now?"

"He's gone down cellar for a scuttle of coal," I says. "In other ways of saying it, he's under what the third car dumped when she couldn't stiffen her car for a spin."

"Great guns!" says Sunshine. "Is that so? We must dig him out quick. Come on, you!"

I don't care for that "you" stuff, but I knew Sunset was not enjoying himself where he was, so I started in to help mine him. Others of both crews came back and pretty soon we uncovered old Sunset. He

was lying still and quiet with blood oozing from his head.

"See if he's dead," I says to Sunshine. "If he is, we might as well wait for the wrecker and use a derrick on him. He must weigh a ton."

Sunshine stoops down and all by himself he lifts up Sunset. He carries him over to the fence and puts him down in the lee of it.

Then he starts in to give a demonstration of first aid. He patted Sunset and walloped him and pulled his arms and worked his legs up and down and talked to him real earnest about opening his eyes and speaking to him—meaning Sunshine.

About the time I gave up all hope and began to feel sorry for Sunset, and to say to myself that he was a good old scout and it was too bad, Sunset opened his eyes. He sat up, acted as if he was going to lay down again quick, spit out a mouthful of anthracite, and says:

"What're you trying to do, Riley—maim me?"

"Great guns! What do you think of that?" Sunshine asked those present, for he knew that when Sunset called him by his real name that Sunset was sore. "What're you blamin' me for?" Sunshine goes on. "I'm not to blame. We aren't at Mattison yet. That's where Ninety-One had time on us."

Sunset heaves himself to his feet and shakes himself like an elephant that has got Cayenne pepper up its snoot.

"If you'd been 'tending to your business instead of mooning in that silly way you've got lately, you'd have seen that Ninety-One," Sunset says. "You'd have got stopped before you hit her and put us all over the premises. You make me sick."

Sunshine was too good a throttle boy to stand the gaff like that. He went all hard and chilly, real dangerous like.

"Why," he says, "you make me sick, too. If you don't like the way I handle my engine you know what you can do."

Sunset had dusted himself off and found he had no bones broken, and his wind had come back, and so he just made a right vicious pass at Sunshine where Sunshine stood. His big mitt zipped past Sunshine's face, and then Sunshine's good right fist shot out, straight and true.

No; Sunset didn't go down in a heap. He was too solid on his pins for that. He made a kind of a whishy sound out of his face, and then he let out a roar that would rock Gibraltar. He jumped; and he and Sunshine became one and the same man so far as telling 'em apart was concerned.

They wrestled for a minute, and then they stepped back and banged and wrestled some more, and then banged some more. If they both hadn't been huskies one of 'em would have died in the first round.

Pretty soon they were fair winded. Sunshine planted a smash right on Sunset's nose and Sunset went to his knees. About all that Sunshine had left was in that punch and he went to his knees, too.

It was funny. They were too tired to get up, and so they just kneeled there and tried to wallop each other. One of Sunset's wallops connected and Sunshine keeled over. Sunset, all tired out, took a look, to make sure, and then he softly stretched himself out. There they lay, abusing each other most scandalous.

Well, the gang gathered round and got them to their feet, and told them they had gone to a draw and to shake hands and let all end well

"Shake hands with him?" Sunset whimpers. "Not me. I'll teach him to monkey with a girl I'm paying court to."

There was the cat scooting right out of the bag, hissing and spitting, her back humped till she was like a bounding ball. Sunshine stared at him.

"Well, I'll be cu-ussed!" said Sunshine. "Were you fighting about Susie?"

"Keep your dirty mouth off her name!" says Sunset, and limps away.

Sunshine stands looking after him, dizzy and dazed. Then he goes to see what kind of a scrap-heap his dear engine has become.

You can see for yourself how things were stacked up. Sunset had stood the uncertainty as long as he could. He had been ruffled in spirit by that coal falling on him, and what he had been nursing in secret all the time he was playing fair weather with Sunshine bubbled up in him.

"This matter," I says to myself, "is

getting interesting now. I think I shall spend my evenings at home when I'm in."

III.

THE next evening I was sitting just inside my door up-stairs—with the door open, of course—when the door-bell rang. Susie emerges from the parlor, according to my ready ear, and opens the door

"Why, Mr. Riley!" she says. "What has ever happened to you?"

"I've been in a wreck," says Sunshine.

There was no more said for a minute The door was shut and the two went back into the parlor. I edged my right ear out of the door. I guess they sat for quite a spell, while Susie looked Sunshine over. At last she says:

"Sunshine, those do not look to me—those injuries—as if they had been received by you in a railroad wreck."

There was a kind of a steely glitter in her voice, as they say, and I guess Sunshine was taken aback for a spell. Finally he says:

"I was in a wreck all right, Susan. A Ninety-One hit us standing up when Curtis forgot he had a pressing engagement with us at Mattison."

"You look," said Susan, high and lofty, "as if you had been fighting. You tell me the truth, Sunshine Riley, or I'll never speak to you again."

So Sunshine, to save being barred from basking in her amiable presence, up and told her.

"And who won the fight?" says brown-eyed Susan.

"Nobody," says Sunshine. "It was called a draw."

Nothing stirring for another spell.

"Sunshine," says Susan then, "will you promise me something?"

"Me?" Sunshine comes back. "I would promise you to shoot Niagara Falls on the back of a Kansas mule if it would add to your peace of mind!"

"Promise me you will never fight with Sunset again, no matter what he says to you," says Susan.

"Right!" says Sunshine.

By gosh, it was like a pistol shot! I could see old Sunshine—in my mind's eye, of course—standing up straight and strong and fair and passing that obnoxious promise to his adored one. Then there was a minute of silence and the front door slammed. Sunshine had gone out into the night—alone.

I went down-stairs. It was none of my business, but nothing much was in those days. So I just butted in:

"Miss Susan," I says, "you have done a good man wrong. You have tied him up so he can't protect himself in a pinch. Sunset will cave his face in for him."

"I am afraid, Mr. Hawkins," Susan says, quite cool, "that I shall have to ask you to seek another place to board."

"Gee," I says, "I'm not down here saying anything to you, Miss Susan! I'm back up-stairs in my room, knowing absolutely nothing about what has here transpired. Please forgive and forget. Let bygones be gone as far as they will. This has become like home to me. I have no other."

"Oh, I am not angry about that," says Susan. "But I am to be married before long."

I sighed and retraced my weary steps up-stairs, my head upon my chest. So that was her foxy game; eh? She was going to marry Sunset and she had tied up Sunshine, in his fervent love for her, so Sunshine wouldn't muss up Sunset any more.

I got me another place to board next morning. That evening I met Sunset as he was coming in.

"I thought you'd be laying off," I says.

"Why?" he says quite ugly.

I told him what had happened. I took no pleasure in it, except the pleasure a man always gets in being the first to convey glad tidings.

"Why, Hawkins," says Sunset, "you don't say so! You don't say so!"

And before I could back away he grabbed my hand and wrung it like he was wringing a chicken's neck. He started away double-quick and bumped right into Sunshine.

Sunshine gave him a cool and frosty look. Promise or no promise, Sunshine would have gone to the mat right there if Sunset had opened his trap. But Sunset was all to the gladsome and gay.

"Ah, Sunshine!" he says. "Glad to see you! Very glad to see you! Hope our little disturbance has made no difference in our relations. I always liked you, Sunshine." Then he was gone. I edged up to Sunshine.

"Miss Susan is going to marry that guy," I says. "She told me so last night. She asked you not to battle him so he wouldn't get his map mussed up just before the wedding."

Sunshine got white around the gills. He took that whiteness to the old man.

"I'm sick," he says. "I can't go out to-night."

The old man took one look at his face.

"You'd better go home and go to bed, Sunshine," he says. "You look like you were coming down with typhoid."

Sunshine pikes off in the general direction Sunset had taken. Sunset was off duty. He had been called for an extra to go fifty miles or so over the district and had turned and come back. I feared ructions.

When I got back the next night the yard was seething with conversation about Sunshine and Sunset, and a run-in they'd had the night before at Miss Susie's. No two stories were alike, and if you added 'em all up they made a total that was a riot.

I saw Sunset the next night after that.

"How'd you come out?" I says.

"Go to blazes!" he responds.

I got no news for a week. Sunshine was among the missing. Then one afternoon, on my way to work, I met up with Susan. She was looking as fresh as a custard pie. I stopped her.

"Say, Miss Susan," I says. "Put me wise. I have stood about all of this suspense I can. Where's Sunshine? What was the ruckus up at your house?"

"Why, you sinful man," she says, "you were the cause of it all. How dared you hint to Mr Jenkins that I was inclined to marry him!"

"You told me so," I says. "You fired me from my home so you could get married. You bound poor old Sunshine so he couldn't protect himself in the clinches or out of them. But Sunset is all soggy now. I'm mystified."

"Silly!" says Susan. "It was like this: Sunshine was a waster and Sunset was a saver. I'd been forced to pinch pennies all my life. I didn't know what to do. If Sunshine had been himself, and yet as steady as Sunset, I'd have had no manner of doubt in choosing; or if Sunset had been of Sunshine's happy nature. You see, I was fond of Sunshine—who wouldn't be?—but I didn't want to come to poverty in my old age.

"So when Sunshine and Sunset fought I tried Sunshine to see if he would be led. You heard him give his promise that he would not fight with Sunset, no matter what Sunset said to him. Well, that showed he would obey me. I knew that if I married him he would be guided by me.

"He has promised me faithfully that I shall handle his pay-check every month. That eliminates his only faults. We are very happy. I know he will keep his promise."

"You are going to marry old Sunshine?" I gurgled.

"We were married a week ago," says Susan.

I was half-way through congratulating her when I stopped.

"But," I says, "what was the riot at your house that night Sunshine laid off and followed Sunset up there?"

Susan's pretty face got as red as a new-cut beet.

"Well," she said, "Sunset got abusive. He asked me to marry him, and I said I couldn't. He begun to storm. Why, he actually seized me by the wrist."

"The brute!" I says.

"The brute!" says Susan. "I screamed. Sunshine was just coming up the steps. He burst into the hall, into the room. He was magnificent in his anger."

"'What's this?' he said, low and harsh.

"'Sunset is being mean,' I said.

"'You little vixen!' Sunset said. 'You've been stringing me. You led me on.'

"I was violently angry. I think I saw red for a minute.

"'Sunshine,' I said, 'do you permit that?'

"Well," Susan sighed, "they broke one of the chairs and marked up a lot of the

other furniture, but finally Sunshine subdued Sunset. Yes, Sunshine was magnificent."

She was all aglow with admiring emotion.

"But," I says, making one last stand, "you had made Sunshine promise he wouldn't lay a hand on Sunset."

"Oh, as for that," says Susan, "it wasn't a question whether he would or would not. It was a question whether he would obey me. Sunset deserved chastisement. I wanted him chastised. Sunshine obeyed me in that, didn't he, when I appealed to him?"

"Sunshine is in to clear for keeps," I said.

"Oh, no," said Susan, "he'll get his running orders every day. What did you say, Mr. Hawkins?"

I hadn't said anything. I didn't. I was thinking deep, however, about the cool and frosty way Sunshine had fixed his lamps on Sunset that evening down in the yard, and about the little time he had lost in going on a hunt for Sunset.

"Dream on, brown-eyed Susan!" I says to myself as I turned away. "Oh, dream on!"

HOW WE ARE DOING "OUR BIT."

BY J. L. STEPHENSON,

Conductor and Prevent Injury Committeeman, Chicago, Rock Island, and Pacific Railroad.

I PREVENT injury to myself and others.

I prevent killing or injury to stock on right-of-way.

I prevent damage to equipment or property, not only company but all personal or otherwise.

I prevent damage to freight, baggage, and express.

While I am on my run over the division I make note of all scrap-iron, old drawbars, knuckles, pins or any other material that might be of value and notify proper officials so that they may gather it up. I also keep a lookout for cars unnecessarily delayed and report it to my trainmaster. I talk to shippers and patrons and try to impress upon them the necessity of loading cars to full capacity, quick loading and releasing of cars.

BY V. B. SIMPON,

Roadmaster, Rock Island Lines, Eldon, Missouri.

ONE of the things that I am doing to assist our government in the great war is that I am insisting on everybody along our track cultivating our right-of-way.

I started among our section foremen, laborers, and agents. It developed last year that the section laborers were not able to buy seed potatoes and I handled the problem in this way: I saw our train and engine men and asked them to furnish the seed and take half of the crop. By doing this we got possibly one hundred bushels of seed planted last year which produced probably one thousand bushels of potatoes.

BY FRED OLSEN,

Section Foreman, Stockton Division, Southern Pacific Company.

I AM using extra watchfulness to prevent any interruption to the movement of trains; I am watching campers and vagrants to see that there is no danger of fires or tampering with bridges and trestles. I am inspecting carefully every part of the tracks, rails, bolts, and switches to see that everything is in the best possible shape to allow trains to move at their best speed with entire safety.

I am devoting my whole time and energy to the one subject of making the transportation of soldiers and supplies quick and safe.

SAM LOYD'S RIDDLES FOR RAILROADERS

PRIZES FOR THE CLEVEREST ONES.

TO each of the ten persons who send the best answers to the above puzzles will be awarded a copy of the "Cyclopedia of 5,000 Puzzles, Games, Tricks, and Conundrums," published at five dollars.

By "best" is meant, in the first place, absolute correctness. Then, if minor points of merit must be taken into consideration in selecting the winners, clearness of explanation will be a deciding factor.

In event of no "clean scores," then the prizes will be awarded for the "best received." So don't be discouraged from sending in an incomplete set of answers in case you cannot work out all of the puzzles.

Mr. Loyd will examine all letters received, and his adjudication must be accepted as final by all contestants.

Write out your answers and send them in by post to Sam Loyd, care the RAILROAD MAN'S MAGAZINE, No. 8 West Fortieth Street, New York City. Your letter must be in this office not later than February 1. Mr. Loyd will publish his own answers in the March number, and announce the winners of the contest at the same time.

INVESTIGATING A HOLE.

WHILE waiting for his morning train, the commuter with an investigating mind stood at the end of the platform and watched a laborer engaged in digging a hole.

"How deep is that hole?" inquired the commuter.

"Take a guess," replied the workingman, who stood in the hole. "My height is exactly five feet and ten inches."

"How much deeper are you going?" continued the commuter after reflection.

"I am going twice as deep," rejoined the laborer, "and then my head will be twice as far below as it now is above ground."

The commuter wants to know how deep that hole will be when finished.

HIS AUTOBIOGRAPHY.

"I SPENT 1-6 of my years on a farm, as a boy," remarked the old railroader; 1-12 of my life punching railroad tickets; 1-7 and 5 years in the freight department and matrimony; then Johnny was born. He took his first train out four years ago when he was but half my present age."

What's the age of the old-timer?

THE PASSING TRAINS.

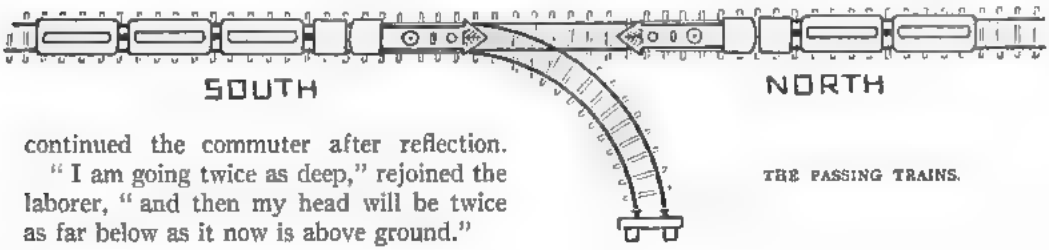
IN the old days of single-track railroading, when trains failed to keep their appointments at the passing switches, they met head on, as shown in the picture. Then there was an awful fuss in deciding which train must back up to the switching point, miles back.

Now, in the present instance, a little ingenuity would assist them out of the dilemma very nicely. To make full use of that little spur, shown between the trains, is all that is necessary under the circumstances.

The spur will accommodate an engine and its coal-tender, or one of the cars, at a time, and through that medium the two engines and five cars may be made to pass one another and proceed on their respective journeys. No flying switches are to be used, nor is a car to be connected to the front of an engine.

It is not a difficult feat, but rather an interesting little puzzle to figure out the shortest method by which the maneuver may be effected.

In describing the solution, the trains may

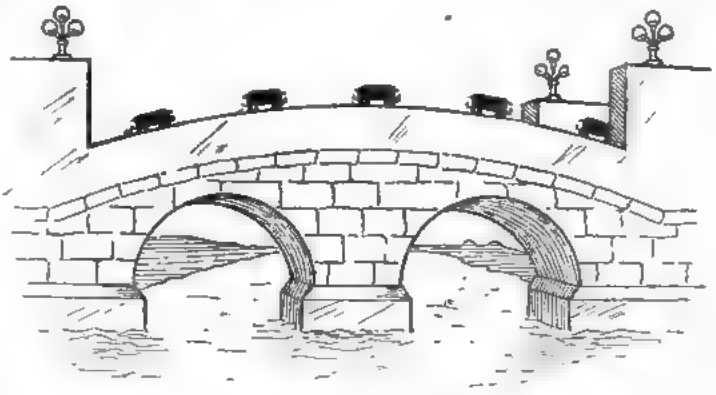


THE PASSING TRAINS.

be designated as: north engine and cars, and south engine and cars.

COUNTING THE TROLLEYS.

WHILE awaiting the arrival of a friend who came by trolley across that little bridge, I observed that the cars departed simultaneously from opposite sides, and just far enough apart to have always ten cars on the bridge, five going in either direction. In the sketch we can see the five cars on one side of the span, but not those on the other side. My friend is on one of those five cars, and so far on his journey has passed five cars coming toward him. Can you tell what car he is on?



COUNTING THE TROLLEYS.

VARIABLE MERCURY.

"GOODNESS gracious, how the mercury varies!" said Squire Johnson, as he scrutinized the station thermometer, which registered 10 degrees above zero. Then he studied the charted fluctuations for the day, and further ejaculated:

"According to those fluctuations, it has traveled 25 degrees during the day and fallen back 3 degrees."

Now, if the squire told the truth, what is the lowest mark the mercury could possibly have touched during those 25 degrees of travel?

HOW TO SELL LOTS.

I KNOW a railroader who has always an eye out for real-estate bargains along his run. He's a shrewd speculator; and when it does so happen that he goes wrong on one of his deals, he is quick to follow with another that more than evens the score. For instance, the other day he sold a pair of lots for $210, and admitted that on one of them he stood a loss of 10 per cent. "But," he quickly added, "I made 10 per cent on the other, so I cleaned up just 5 per cent on the transaction."

What did each of the lots originally cost him?

A SWEET PROFIT.

THE candy butcher sells a popular mixture of two kinds of candy, one of which costs him 25c. per pound, and the other 15c. He mixed up 40 pounds, which he sold for 30c. a pound, and gained a profit of 33 1-3 per cent.

Now, how many pounds of the 15c. candy did he put in that mixture?

SQUARING ACCOUNTS.

LET me tell you, the old man's son has got the right stuff in him. He nagged his dad until he took him out of college and gave him a job in the transportation department. After working two weeks the boy cornered his governor and delivered himself of a neat little speech, as follows:

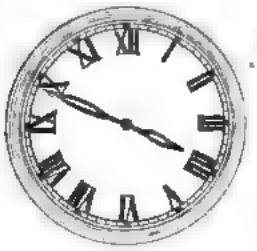
"I have figured out that I have cost you $14,400 since I was born. My average cost, per month, has been three times as many dollars as my present age in years. I will have saved enough by my twenty-fifth birthday to repay you the $14,400."

How much each year will the ambitious boy have to save?

SPRINTING FOR THE 3.50.

WHILE waiting for the 3.50, I made a careful study of the big clock that hangs like a moon in the Penn Station. Finally my subconscious mind got working, and set me the task of watching for the psychological moment when the two hands

would form a straight line across the dial. When the moment came and the mental tension snapped, I sprinted for my train, and had only time to cast a final glance over my shoulder and notice that, peculiarly enough, the hands divided the figures of the dial into two groups, each totaling 39. I caught my train as it started to pull out on schedule time.



SPRINTING FOR THE 3 50

While on the journey, I figured out my speed for that 250-yard dash. What do you make the elapsed time from the moment the hands formed a straight line to 3.50?

ANSWERS TO JANUARY PUZZLES.

EXPLAINING THE DELAY.

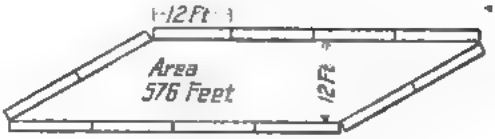
Big Jim's run was 200 miles. He had gone 50 miles before engine trouble, and traveled the remaining 150 miles at 3-5 the former speed. He could have gone 83 1-3 miles at full speed in the same time that it required to go 50 miles at 3-5 speed. Thus he would have saved 33 1-3 miles. If at the same time he saved 40 minutes, then 33 1-3 divided into 40 gives 1 1-5 minutes as the time per mile going at full speed.

MOUNTAINEERING AT CONEY.

We rose 1 foot in ½ second and fell 1 foot in 1-20 of a second—11-20 of a second to rise and fall 1 foot. Sixty seconds divided by 11-20 gives 109-111 feet as the length of the chute.

COOPERATIVE HOUSEKEEPING.

Mrs. Jones was the daughter of Smith and the niece of Brown, so there were but 4 persons, the only assumption that meets the conditions of the problem. One hundred dollars was contributed, $92 was spent, and each received $2 in the distribution.



RAIL GEOMETRY.

RAIL GEOMETRY.

The diagram shows how the 12-foot rails are arranged in a parallelogram just the width of the rail, enclosing an area of 576 square feet.

METHODICAL DRUMMERS.

The drummers passed one another in the middle of Pennsylvania at a point midway between towns 17 and 19. Jones passed through the towns in the following order: 5, 12, 10, 18, 24, 16, 3, 25, 26, 9, 7, 1, 17. Brown's route was as follows: 21, 6, 4, 14, 11, 8, 2, 15, 23, 13, 20, 22, 19.

A PUZZLING DATE.

The stenographer made her speech regarding the date upon September 21.

DID THE SQUIRE MAKE HIS TRAIN?

Squire Jones must have awakened to hear the last stroke of 12. Then the clock struck 1 at 12.30, 1 at 1 o'clock, and 1 at 1.30, which would indicate that his train left at 1 45.

TRAVELING IN MEXICO.

After traveling 40 minutes the conductor stated they had gone just half the remaining distance to P, so it is clear that the time between B and P consumed 120 minutes. Later on, between P and Q, he stated they were just half as far away from Q as from P. Then they reached Q in an hour, which makes it clear that they consumed 180 minutes between P and Q. Thus we have the time of the whole journey as 5 hours. It required 200 minutes for the 7-mile stretch, so the distance covered between B and Q in 300 minutes must have been 10½ miles.

A TRANSPOSITION ENIGMA.

Black 3 to 2; White 5 to 8; Black 4 to 1; White 6 to 7; Black 2 to 5; White 7 to 4; Black 1 to 7; White 8 to 2; Black 7 to 6, and White 2 to 3.

On the Editorial Carpet

Where We Gather in the Hut, Tell Our Troubles, Help One Another, and Sing Some Old Songs.

A MINER'S battle for his rights against all the adverse forces of nature in the wildest regions of the Rockies, and with the malign elements apparently in league with a bunch of dirty, human crooks! That in itself ought to furnish the theme for a corking story. But when you add to that the railroad interest -the struggle the rotary snow-plow put up against almost impassable drifts in the last breath-taking round of a long fight against time and circumstance—then you pile interest on interest.

And when you meet the people in the story—gallant *Jim Darrow*, *Lugubrious Bill*, his henchman, resourceful *Isonia Witmer*, and all the rest then you will finish our next month's complete novelette with the feeling that you've not only had an evening of fascinating entertainment, but that you have also genuinely added to your circle of friends. That summarizes what you may expect in

FIGHTING HIS WAY DOWN.

BY WILLIAM H. HAMBY.

ALTHOUGH this is the first story by Mr. Hamby to decorate the RAILROAD MAN'S MAGAZINE, readers of other publications issued by this company will remember him as the author of "The Laughing Quartet," which appeared in *The Argosy*, and of "The Mingling of the Waters" *(All-Story Weekly)*, as well as a number of shorter works of fiction. But in the complete novelette which you will get next month it is safe to say that Mr. Hamby has done his prettiest.

The story starts with the throttle quarter open in interest; it picks up speed with every chapter, and comes into the "Finis" terminal with the style of a crack limited, whose reputation for timeliness is such that the section foremen on the division correct their watches by its passage.

"HERE'S how! Here's to the dauntless cableship, the intrepid crew, and the cable game, by far the most difficult, romantic, highly enticing game of all telegraphy!" Thus chanteth Samuel W. Beach at the outbreak of an article next month, in which he relates some stories about the daring layers of submarine dot-and-dash routes. You know Beach—author of "Locating Leaks in Submarine Cables," "The Navy Department Telegraph," "Wireless Points and Pointers," "Signals Used at Sea," and a slue of other good articles. Next month he outdoes himself. By the way, the art editor promises some remarkable pictures, too.

SEVERAL years ago some one got the idea that it would be a good scheme to stoke an engine-fire by some mechanical means instead of feeding in the coal by hand But the firemen kicked. They were afraid that this would mean giving up their jobs to a lot of unskilled workmen, who would sit and pull the levers of the new device

Well, the automatic stoker did come in, anyway, and the firemen soon found they had nothing to fear. For the more improved method, though it did save a lot of hard and unnecessary work, required a well-trained man

Now the automatic stoker is in use on every big road. There are five well-known types. Without

this method of feeding, the big Mallets and triplex articulated engines of to-day would be impossible.

If you are an engineer, a fireman, or have any interest in what makes trains move, you can't afford to miss this big, illustrated feature, "Mechanical Stokers," in the next issue. The author, H. A. Kenney, is an expert, who knows his field thoroughly. In this illuminating article he explains the details of how these wonderful devices work, and why they are wonderful.

UNFORTUNATELY the article on building electric locomotives, scheduled for this number, had to be held over. It will positively appear next month, illustrated by more and better pictures than you could have got if we had rushed to press with it in the present issue.

ARE railroad men superstitious? That is a question to be threshed out in the next issue by A. R. Pinci, a journalist of wide observation, and Frank Kavanaugh, himself a working railroader. Each writer illustrates the points he makes with a wealth of examples. Besides this there will be a full tonnage of other features, of course—fiction, photographs, and fun.

POET BYRNE'S NEW BOOK.

C. J. BYRNE, well known as "The Poet of the Railroad Yards," has recently published a new edition of his popular collection, "Rhymes of the Rail."

This little book contains a number of poems of great charm. Humor and pathos are found in happy proportion, and in all of Mr. Byrne's writings there are a quality and selection of subject matter that will appeal to every railroad man

Several new poems have been added that did not appear in the first edition and all the prose has been eliminated. Many of the verses in "Rhymes of the Rail" appeared originally in the RAILROAD MAN'S MAGAZINE. The book is published by the Rhymes of the Rail Company, Box 216, St. Paul, Minnesota, at twenty-five cents a copy.

SNATCHED OFF THE MAIL-CRANE.

SAM RODRIGES again! Nobody's letters ever get a bigger response than do those of this old-timer. Just to give an idea of how true they are, let me quote a passage out of a letter to him from his old boss, Theron M. Bates: "I have just read your reminiscences on the Chicago and Alton in the October number of the RAILROAD MAN'S MAGAZINE, and I cannot refrain from writing to congratulate you I have been railroading again in my mind since reading the article. Many of the incidents you relate are thoroughly familiar to me, and may be more so in detail." And James Walker, of the Home for Aged and Disabled Railroad Employees at Highland Park, Illinois, writes: "The articles by our friend Sam are just simply immense. All the residents of this house, myself included, will be delighted to have this very interesting writer continue and give us much more." All of which makes us sure that you will enjoy the following letter from Friend Rodriges as much as we fellows here in the office did:

My kids say I have a propensity for running off at the face, but I am not guilty. From the many letters I have received from old rails asking that I come again, and having more time than money, if it is agreeable to all concerned, I don't mind giving some of my experiences as a car-hand. But, like the croaker, I don't want to give an overdose And I want it understood that I am no hot-air merchant, every word I write being the truth and the whole truth, so hellup me.

I have had some experience on other roads besides the Alton. I railroaded from 1870 until July, 1894, when I got tangled up with the A. R U., and went up in a cloud of smoke, and have been smoking ever since; but I think it is better to smoke here than hereafter

I would like to tell you about the A. R. U. and the time we had after the worst of the smoke had blown over. What a time "Gimpy" Arnold, "Blondie" Melburn, and I had going from Bloomington to Denver, Colorado, hunting an office!

We were all good brotherhood men, with traveling cards in our pockets; but we hit the grit off of thirteen trains out of K. C. The fourteenth one was run by a conductor I had known on the Alton, a fellow by the name of Riley. He brought us to Osawatomie, Kansas, as far as he went, where we laid over quite a while. I will can that stuff now.

I wonder how many remember Gene Swift, or, rather, Gene Browning. We used to call him Gene Swift because he was so slow. He was the only hoghead I ever knew who would run faster

after dark than in daylight, and it was his usual remark to say, if we asked him why he poked along so slow: "Wait till the sun goes down and I'll burn 'em up."

He was one of those fellows who fired about twenty years, and when he got an engine, he owned every nut and bolt in her, and would not goose her if he was going to run over a man, afraid she would blow out a little hemp. I never will forget the time I had him on No. 33 and we turned at Joliet and were returning to Bloomington with eighty three empty box cars. It was an awful foggy night; we could not see five car-lengths ahead

We stopped at Braidwood for coal and water, and when we started out, he tried to start the caboose first, like most of them do, and he gave them such a jerk he broke off the caboose and two cars, taking eighty-one cars with him. I knew they were cracked in two right away, and I told the hind shack to look out for the hind end and I would try and catch the head before they got to the end of the division

I started at a run after the head end. It was three miles over the bridge where there was an interlocking plant, and I made sure maybe the operator there would notice they had no caboose and telegraph Dwight and make them come back. So I kept going, anyway, and went on to Mazonia, where I came near running into the train, it was so foggy.

I went on over ahead, and when I got to the engine, the 128, there she was, lying over on her right side at about an angle of forty-five degrees.

Gene was standing by her side with his hat in his hand, as if he was at a funeral of a dear friend. As soon as he saw me he said:

"Rodigee, there she lays. I wish I was under her! Six hundred dollars in debt and a rag-carpet on the floor! I wish I was under her!"

Poor boob! He thought he had lost his job. The semaphore was against him and the derailer for the ground, and, of course, he could not hold them as the 128 was a bald head; that is, no air. So he thought his career was ended. When I told him how things were and he was not to blame, he was O. K

How many remember the old vacuum brake? It used to make so much noise the eagle-eye could not hear the names the head shack called him The Dutch clock was our Jonah on the Tonica. It was aggravating to have a light train, "straw hats and paper collars," and have a chance to fan 'em and know that devil's invention was back in the caboose keeping tab on every mile and minute.

I took the bull by the horns once when I was in Bloomington all day. The shacks were gone and I was alone. I took the clock off the box and put it on the side-table, and went to experimenting with cutting off the hair-spring, a little at a time, and I got it so it would travel an hour in about thirty-five minutes, which would let me run about thirty-five or forty miles an hour.

That night we came out on an extra, and I had George Brown pulling me. Before we left Bloomington I said to him:

"George, I fixed my clock to-day, and she is good for at least thirty-five an hour; we have only Nos. 75 and 5 to meet, so see if you can burn 'em up to-night."

Brown knew me and I knew him. We made a fine run. In those days an operator reported a train by the "soup ticket" he got from the conductor of a train. When we pulled out of the yard and got down to the Union Depot, the yardman made us back up again to let a train in, and when we did pull out it was fifty minutes after the time I had registered

I did not change the register, but took the fifty minutes and distributed them down the line at the night offices. When we got to Roodhouse next morning, I took the sheet out of the clock and took it into the superintendent's office and said to Mr. Reeves

"I had a chance to make a nice smooth run last night and tried to make about twenty miles an hour. I wish you would have Mr. Seymour size up the sheet and see how it shows up. I think I know about what twenty miles an hour is."

They sized up the sheet and it did not show over twenty-two miles an hour anywhere, and Mr. Reeves said it was as fine a sheet as had ever come to that office. I used to make some fine runs, till one day I was making a flop of some cars, and they struck so hard it made me turn a somersault off a box car into a coal-car, and I sprained my ankle so bad I had to lay off a week.

"Baldy" Sawers got my caboose, and I had told him my clock was good for thirty-five an hour, but not to make a fool of himself. The first rattle out of the box he let "Windy" Brown down Bowling Green hill forty miles an hour and they broke in two, and had everybody scared so that Windy told Sawers at Louisiana that he was going to report him for fast running, and Baldy said:

"Report me; the clock won't show over twenty an hour"

When they got to R. H. Windy reported it, and they took the clock to the office and put it beside another one and it ticked twice as fast as the other. If I had been on the car I would have been canned.

I was scared all the while about that clock, but I turned in my sheets promptly and never reported the clock out of order; so Seymour never bothered so long as he got the sheets regular.

When I was at the end of the division I had to keep a rubber elastic over the pencil to keep it still and let no one hear it tick. Only once, when we were having a game of poker in my caboose, Dan Scott said:

"Holy smoke, listen at that clock!"

And I said: "Shut your mouth and put a muzzle on it."

Harry Oldham and Harry Day were artists on making shuts They just ran the sheets over the

cylinders to make the pin-holes, and then they put the pencil-marks on. I wasn't foxy enough for that.

I wonder where Joe Daley is? I used to brake for Daley when cabooses were scarce, and Jordan gave him an old box car, the 1776, with a single brake on only one pair of trucks. We used to just fall down those hills. Daley would not let me get on top, but would tell me to set the caboose brake, to "steady 'em a little," and the thing wouldn't take the stack out of three cars, when the rails were slick, and we would just go skitting along at about forty per.

Joe would say: "She makes a good sled, don't she, bo?"

It only had one locker in it, about eight feet long, two feet deep, and two feet wide—just to keep the lamps and the top lights, chains, brasses, tar bucket, and jack in.

We had two old quilts we stole from a flat-boat at Louisiana one time when we were on a construction-train.

Joe used to try to sleep on the locker, but after we had it a while the wheels got to be square, and it would nearly jar our teeth loose and make our legs wabbly, and if we slid down we had to hold our stomach in as tight as we could, then get the stomach-ache at that. But we would rather have had it than a real caboose, because it had no clock, and we could fan 'em; and, running three ways out of Roodhouse, we would often get ahead of one or two other crews, who had to hold them down

I wonder if any one remembers the year that Duke Alexis of Russia made a trip all over the United States? He was petted and fêted every where. At St. Louis they gave a grand ball in his honor, and only the *crême de la crême* were supposed to enter there

"Wren" Smith was a conductor on the Alton then, and a good one, too. He was one fine man.

Well, Wren was in St. Louis that night, and he made up his mind he was going to the ball. And he did. How he got in no one ever knew; but it seems when they got to counting noses there was one too many, and they soon spotted Wren, all decked out in the hardest of boiled shirts, cut-away, and collar, and they kicked him out of the front door. But he used to say he was the only one of the rabble who had ever knocked elbows with the Juke

Say, do you fellows recall "Orlando Dorando de la Fontain"? He came to Roodhouse and soon, too soon, got a train. Everywhere he would sign the register some one would write "Rats" behind it. He was following me out of Bloomington one night, and when we were getting our orders he says to me:

"Rodigee, look out for me to-night. My headlight will be shining on your caboose all night."

I said: "Look out yourself. I am running strictly twenty miles an hour." I ran thirty-five and forty when I could, but he kept in sight all night.

A week after I saw him and he says:

"Say, what kind of a clock have you got? I am doing thirty days for following you the other night."

He did not last long; he was too cute.

When Harry Day had been braking about a week they gave him a time-card, and right away he wrote home to his sister and says:

DEAR SISTER:

Send me my watch and chain. I have got a time-card and am liable to run a train any day.

And Joe Clark, when he had been braking about two months, laid off and took a brake-staff, chain, and rod to the farm, put them on a wagon, and showed them how they "held down the hills."

Those were great days. They used to go down around Drake, Happyville, and "Dutch Mills," lasso a hayseed, bring him to Roodhouse, and tie him to the bridge down by the stockyards until he got used to the whistle; then give him a time-card and one of the T. M. Bates coupling-sticks, and he was a full-fledged shack.

And about the first thing he did when he got his check was to go up to Jacksonville and get a suit of clothes made—black jeans, spring-bottom pants, like a sailor's, with a flat down the side about an inch wide; double-breasted vest trimmed with braid, and braid about an inch and half wide all around the coat, and a square-top silk cap; and, believe me, there was a man worth looking at. The girls all fell for the duds. I was guilty myself Came from Jacktown, too.

Eight hours are up. Here I tie up.

SAM. RODRIGES.

MORE ABOUT "HE-HAW."

"HE HAW MIKE," the boomer who never lost his gall, concerning whom Ellis Mackenzie has spun us some rib-tickling anecdotes, may not have operated under that precise name; but his kind is a familiar type to railroad men, as the following letter testifies:

That was some bunch of stories about *He-Haw Mike*, the boomer, by Mr. Ellis Mackenzie. As I have worked on two different occasions with *He Haw* on the mountains at Little Rock and at Bixby, Illinois, for the Cotton Belt, I can tell you another yarn concerning him.

Mike was out of a job down in New Orleans, and also delinquent in the Brotherhood of Railroad Trainmen, at the time the cholera broke out down there. They soon had the city under martial law, but any one wishing to leave could do so by applying at the Board of Health and receiving some sort of a clearance card. So *He-Haw* cops a certificate from the Board of Health and heads over to the I. C. yards to grab an armful of box cars, not being up to date in the stingers.

In the mean time *He-Haw* had carefully placed his health certificate in his brotherhood receipt-case along with his delinquent stinger receipts; then he hides down in one end of a reefer loaded with bananas bound for the North. About the time the train got moving, along comes the brakeman. He finds *He-Haw* stretched out, so he tells Mike to come up on deck. *He Haw* hollers up:

"That's all right, I'm a trainman."

But the brakeman happened to be a boomer switchman and, of course, knew nothing of the trainmen's secret works, so he headed *Mike* back to the caboose, as the conductor was a double-header belonging to the O. R. C. and the B. of R. T. After asking the brakeman what he had there, and getting the answer that *He-Haw* was a brotherhood man, the con asked to see *He-Haw's* receipts.

In his hurry to dig out a late trainmen's receipt, *He Haw* produced his health certificate and handed it to the con, who gave one look and a loud roar

"You can't ride my train on a certificate from the Board of Health that shows you haven't got the cholera!" he hollers.

"Well, what has a guy got to have to ride with you—the yellow fever?" *He-Haw* yells back.

I do not know if Mr Mackenzie knew *He-Haw* personally, although his fund of information was very good.

JAMES H. GILMORE

Box 511,
Columbus, Ohio.

FLASHES FROM OUR READERS.

The RAILROAD MAN'S MAGAZINE is the best magazine on sale to-day.

I would like to see tales of the Canadian roads, as I worked on the G. T. and C. P R., and I think there must be quite a few of your readers who would enjoy tales of the Canadian roads. I hope you will always keep "By the Light of the Lantern" in the magazine, as there is some very good information in it, not only for railroad men, but for everybody who reads the RAILROAD MAN'S MAGAZINE.

FRANK CLARK.

13th Co., C. A. D.,
Fort Mills,
Corregidor, Philippine Islands.

Please add my name to your list of those who are collecting photographs of locomotives.

A. R FINNIGAN

303 Fifth Avenue,
Haddon Heights, New Jersey.

Enclosed you will find my check for the RAILROAD MAN'S MAGAZINE. Don't forget to send it on time, for I have not missed a number in six years.

I am not a railroad man, but I could not get along without it.

Wishing you success, I am, a believer in a good magazine,

J. A. WOLF.

Little Cedar, Iowa.

Please add my name to your list of collectors who are willing to exchange locomotive photographs:

ARCHIE GILFILLAN.

1441 Page Street,
San Francisco, California.

Let me express my appreciation for your articles on Mr Frank Turner, appearing in the November issue

Outside of it being an excellent article, on account of me being an old Westinghouse man, it had more than usual interest.

C. W. GOTHERMAN.

11 Lincoln Street,
East Orange, New Jersey.

ADDRESSES WANTED.

Readers of the RAILROAD MAN'S MAGAZINE *who make requests to locate missing relatives through these columns must abide by the following:*

All requests must be written in ink and a complete description of the missing persons given, as well as full name and age.

We will not publish these notices unless they are signed by the nearest living relative of the missing person, and we must be assured that every effort has been made to locate him through the various brotherhoods or associations to which he might belong.

The person making the request must also give his or her complete address

---

INFORMATION is wanted of the whereabouts of Don K. Cherrington, 20 years old, 5 feet 7 inches in height, blue eyes, light complexion, light, bushy hair; weight 135 to 140 pounds; wears No 7 shoes, No. 7 hat; has a tattoo on arm below elbow—anchor and eagle. Last seen January 30 in Detroit. Applied for position in Chicago February 23. Any information concerning him will be greatly appreciated by his mother, Mrs. C. C. CHERRINGTON, Box 166, Gloucester, Ohio.

INFORMATION is wanted of the whereabouts of George A. Johnston, who left home on October 29. Any information concerning him will be greatly appreciated by his wife, MRS. G. A. JOHNSTON, 1459 South Prospect Street, Tacoma, Washington.

INFORMATION is wanted of the whereabouts of James Ryan, formerly of Flint, Michigan. Any information concerning him will be greatly appreciated by his wife, MAMIE RYAN, 2753 Masher Street, Philadelphia, Pennsylvania.

The Gospel Train.

C. A. M. (Dedicated to Railroad Men.) C. Austin Miles.

1. I'm trav-'ling now on the saf - est road, That a trav - 'ler ev - er found,
2. The will of God is my "or - ders" now, And I'm run - ning right "on time,"
3. My "roll - ing stock" is the best that's made, In the gos - pel "shop" down here,
4. I know my road has a "tun - nel," too, But my lamps with oil are filled,
5. My "run" shall end at the Grand De - pot, Where the Su-per- in - ten-dent waits;
My "right of way" is the Word of God, And it runs on sol - id ground.
I'm all prayed up and with "sig - nals clear," "Up the grade" pre-pared to climb.
From "pi - lot's nose" on the en - gine front, To the "mark - ers" in the rear,
And I'll pass thro' with the gos - pel train, As the Su per - in - ten-dent willed.
Re - ceive my "pay" with a glad "well done," As I pass the o - pen gates.
Chorus.
I am trav-'ling on the "hal - le- lu - jah line," On the good old gos - pel train,
Fine.
I am on the right track, and nev-er will go back To the sta-tion of sin a - gain.
D.S.—I am trav - 'ling on the "hal- le - lu-jah line," On the good old gos - pel train.
D.S.
I need no fare, I'm rid - ing on a "pass," 'Tis the blood for sin-ners slain;

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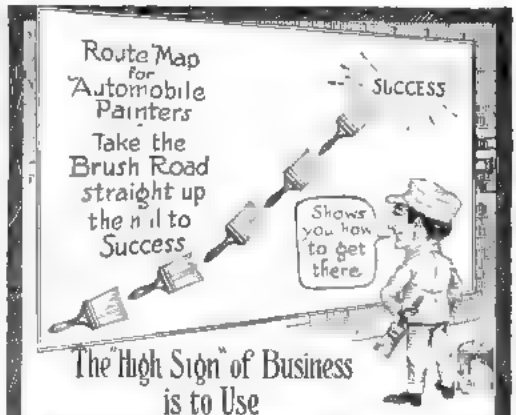

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Bunions are different from corns, callouses, or other foot troubles and require entirely different treatment. Plain reasoning will tell you that any preparation claiming to cure all foot troubles will probably cure **none**, because what is good for corns is **not** good for bunions.

I don't care how many of such so-called cures and pads, plasters or other preparations you have tried without success. I don't care how disgusted you feel with them all you have a right to try **For Bunions Only.** And I have such absolute confidence in it **that I am going to send you this treatment absolutely FREE.**

It is a wonderful yet simple home treatment which relieves you almost instantly of all pain. It removes the cause of the trouble and the ugly deformity disappears—and this while you are wearing your ordinary shoes with perfect comfort. I am not willing to send for "Fairyfoot," FREE at my expense, because I know you will after test that I say, for I am now doing. Just send your name and address and "Fairyfoot" will be sent you promptly in plain sealed envelope. Together with my valuable booklet on Foot Troubles. Write today.

FOOT REMEDY CO.
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Chicago

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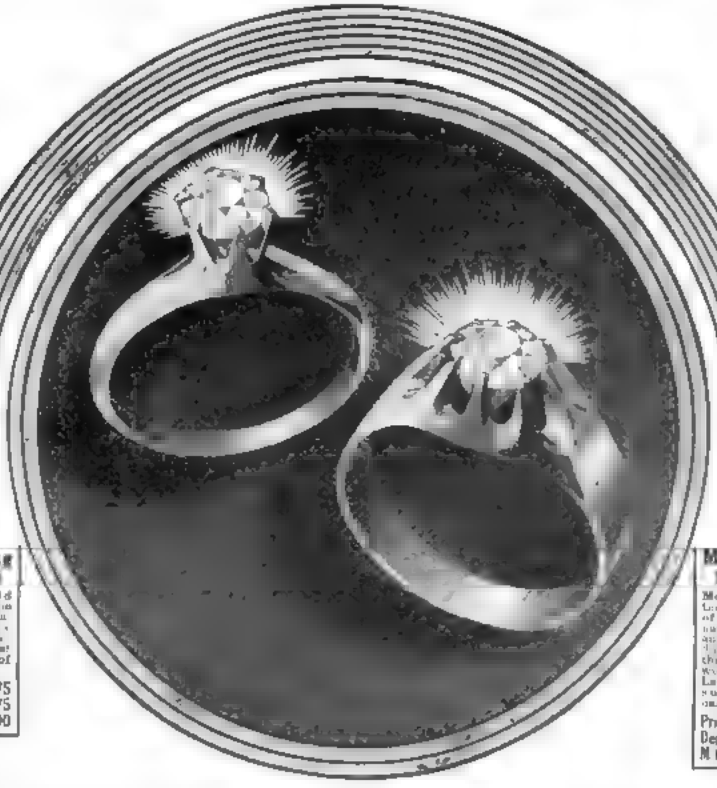

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No. FE8010

This solid gold solitaire mounting is the most popular and latest style in the world. It is set with a one carat Lachnite Gem of fiery brilliance.

Price ... $15.75
Deposit ... 3.75
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We'll Send a Lachnite *on 10 Days' Free Trial*

Don't send us a penny. We'll send you a genuine Lachnite Gem mounted in solid gold—so that you can wear it for for ten full days. These exquisite gems have the eternal fire of diamonds. They are cut like diamonds, stand all diamond tests, and are guaranteed forever. And we will send you *prepaid* either of the superb rings shown above—if you will fill in the the coupon on the left and mail today. Don't send a penny. Wear it for 10 days before you decide to buy. Then if you can tell it from a diamond send it back.

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When the ring comes just make the first small deposit ($3.75) with the express agent and then put the ring on your finger. Wear it everywhere you go for 10 full days. After the free trial—if you decide to buy you may pay the balance at the rate of $2.00 a month without interest. There is no red tape. No mortgages. Your credit is good. And remember, if you aren't more than enthusiastic about your Lachnite send it back and your deposit will be refunded instantly.

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Free Trial Coupon

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Send me prepaid Ladies' Ring on 10 days' free trial. When it comes I will deposit $3.75 with the express agent. After 10 days I will either return the ring or send you $2.00 a month until the balance has been paid. Total cost to me, $16.75. If I return the ring you will refund me $3.75 immediately.

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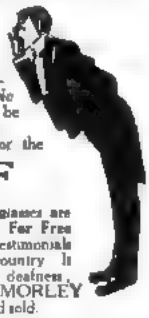

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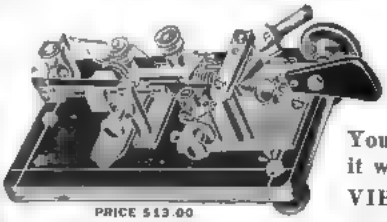

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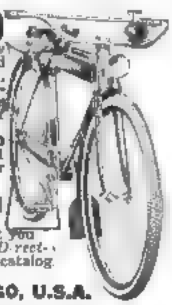

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wants a cool, clean smoke he has to sit by his ponderous hooka or water pipe—otherwise, and for good reason, known as a "bubble-bubble."

You have the best of it. Your Wellington Pipe does not wheeze or bubble. The "well" catches the moisture as well as the stray tobacco. Crumbs cannot come through the stem into your mouth. And the upward opening of the bit directs the smoke away from your tongue.

Wellington

THE UNIVERSAL PIPE

is made of genuine French Briar, seasoned by our own special process. It breaks-in sweet and mellow. The bowl is guaranteed against cracking or burning through. The W. D. C. triangle trademark is your assurance of quality and workmanship. For more than 50 years it has been the sign of supreme pipe value at whatever price you pay or wherever you pay it.

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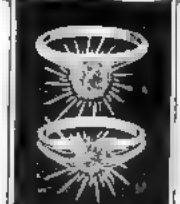

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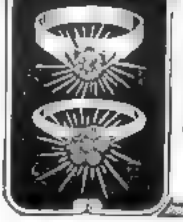

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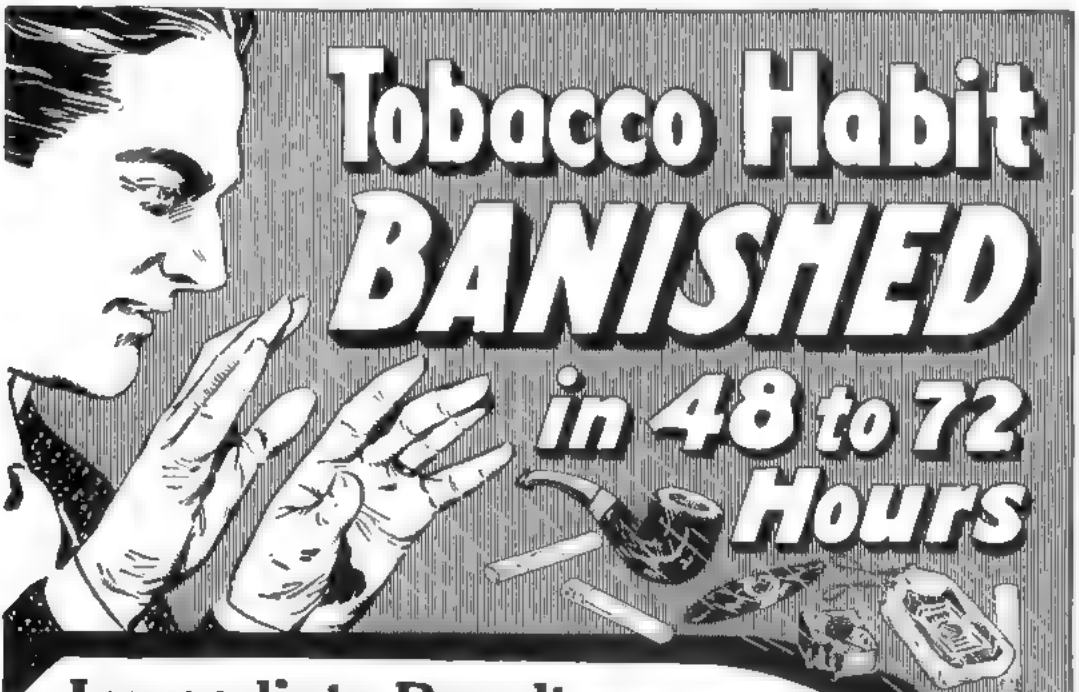

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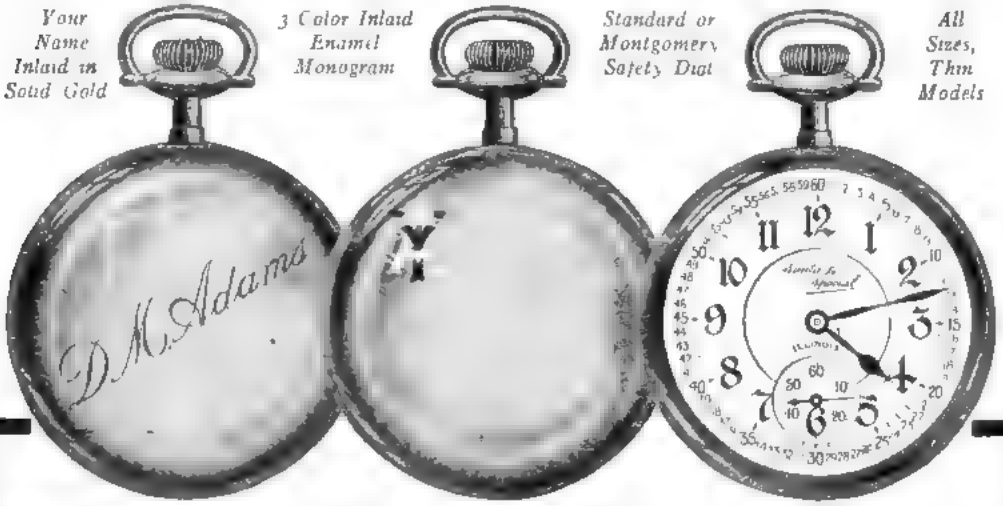

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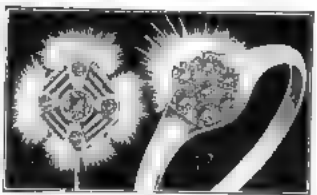

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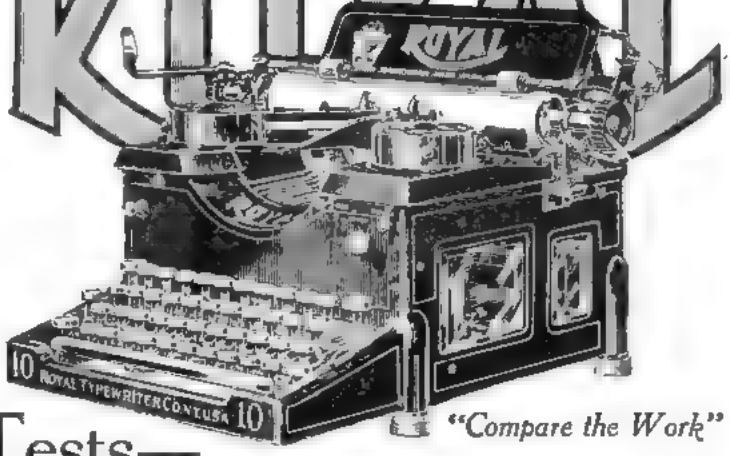

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the "ROYAL" will last and give perfect service *years longer* than you have thought any machine could.

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Buffalo, N. Y., 76 W. Genesee St.
Charleston, W. Va., Masonic Bldg.
Chicago, Ill., 32-34 S. Wabash Ave.
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Cleveland, O., 620 Prospect Ave. S. E.
Columbus, O., Douglas Bldg.
Davenport, Ia., Central Bldg.
Dayton, Ohio, 11 N. Jefferson St.
Des Moines, Ia., Hubbell Bldg.
Detroit, Mich., 29 Washington Ave.
Duluth, Minn., 319 W. First St.
Fresno, Cal., 1927 Merced St.
Grand Rapids, Mich., Perkins Bldg.
Harrisburg, Pa., 19 North 3rd St.
Hartford, Conn., 261 Asylum St.
Indianapolis, Ind., Am. Cent'l Life Bldg.
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Kalamazoo, Mich., 114 W. South St.
Kansas City, Mo., 813 Walnut St.
Little Rock, Ark., 215 West 2nd St.
Los Angeles, Cal., 524 So. Spring St.
Louisville, Ky., 445 W. Jefferson St.
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Milwaukee, Wisc., Northwestern Mutual Life Bldg.
Minneapolis, Minn., 210 So. Fifth St.
Newark, N. J., 207 Market St.
New Haven, Conn., 81 Church
New Orleans, La., 332 Baronne St.
New York, N. Y., 364 Broadway
Norfolk, Va., Board of Trade Bldg.
Oakland, Cal., 1752 Broadway
Omaha, Nebr., 318 South 19th St.
Paterson, N. J., Silk City Trust Bldg.
Peoria, Ills., 430 Main St.
Philadelphia, Pa., 904 Walnut St.
Pittsburgh, Pa., Cham. of Com. Bldg.
Portland, Me., 50 Exchange St.
Providence, R. I., 86 Weybosset St.
Reading, Pa., 16 South 4th St.
Richmond, Va., 16 North 8th St.
Rochester, N. Y., 156 Main St. E.
St. Louis, Mo., Boatman's Bank Bldg.
St. Paul, Minn., Germania Life Bldg.
San Francisco, Cal., 7-9 First St.
Scranton, Pa., 621 Spruce St.
Seattle, Wash., 1217 4th Ave.
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Utica, N. Y., Mann Bldg.
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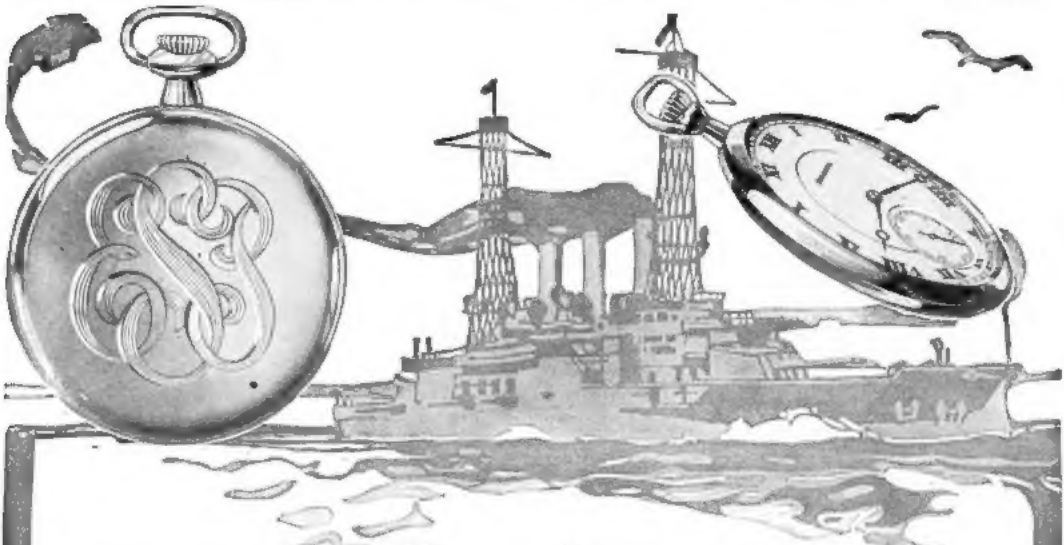

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